Estimating distances.
Safety precautions.
Systems knowledge.
Crew duties.
Lookout doctrine.

Performance Standards. Demonstrate proficiency as a crew chief as stated in the NATOPS and OPNAV 3710.7.

Prerequisite. All prior 100-level flights.

232. CORE SKILL BASIC PHASE

1. Familiarization (FAM)

a. Purpose. To enhance skills of crew functions and responsibilities during day or night flights.

b. General

(1) At the completion of this stage, the CC/AGOUI will demonstrate the ability to assist the entire crew during day or night flights.

(2) FAM-201 is the initial FAM flight for the AGOUI.

(3) If FAM 201 is flown on NS the aircrew shall be NSQ for the appropriate light level or be under the supervision of an ENSI. Initial events shall be conducted during the day.

c. Crew Requirement. CC, CC/CCUI or CC/AOUI.

d. Ground/Academic Training. Prior to beginning this stage, the CC or AGOUI shall the courses listed in the MAWTS-1 ASP.

e. Flight Training. (1 Flight, 2.0 Hours).

FAM-201 2.0 R 1 CH-46E A (N)

Goal. Develop lookout doctrine during FAM flights.

Requirement

Discuss:
Lookout responsibilities.
ICS procedures.
SA.
CRM.
Crew comfort levels.
Local course rules.

Introduce:
Assisting the pilot during FAM operations.

Review:
Standard terminology and lookout doctrine.

Performance Standards. Demonstrate proper lookout doctrine and CRM.

Prerequisite. Academics listed in the MAWTS-1 ASP.

External Syllabus Support. Landing areas.

2. Confined Area Landings (CAL)

a. Purpose. To develop crew coordination during confined area operations.

b. General. At the completion of this stage, the CC/AGOUI will be able to demonstrate the ability to assist the pilots in day CALS.

c. Crew Requirement. CC, CC/CCUI or CC/AGOUI.

d. Ground/Academic Training. As listed in the MAWTS-1 Course Catalog.

e. Flight Training. (2 Flights, 3.0 Hours).

CAL-211 1.5 1 CH-46E A

Goal. Review single aircraft CAL operations; develop skills with tactical approaches and departures.

Requirement

Discuss:
- CRM.
- Obstacle clearance.
- Standard terminology.
- Distance estimation.
- Low altitude emergencies (i.e. landing in trees).
- Rotor blade clearances (blade walk).
- LZ evaluation.
- Wave off/brownout procedures.

Review:
- Lookout doctrine.
- ICS procedures.
- Aircraft clearance and terrain suitability.
- Distance estimation.

Performance Standards. Demonstrate the ability to clear the aircraft for landing into confined areas while recognizing closure rate, drift error and effectively utilizing proper distance estimation and depth perception

Prerequisite. FAM-201.

External Syllabus Support. CAL zone.

CAL-212 1.5 R,O 2+ CH-46E A

Goal. Conduct section CAL operations.

Requirement

Discuss:
- CRM.
- Lookout doctrine.
- Obstacle clearance.
- Distance estimation.
- Wingman position.

Wave off/brownout procedures.

Introduce:
Crew responsibilities during section CAL operations.

Review:
Formation and lookout procedures emphasizing responsibilities during section operations.

Performance Standards. Demonstrate the ability to clear the aircraft for landing into confined areas while recognizing closure rate, drift error and effectively utilizing proper distance estimation and depth perception. Maintaining SA of wingman throughout the evolution.

Prerequisite. CAL-211.

External Syllabus Support. CAL zone that supports multiply aircraft.

3. External Cargo Operations (EXT)

a. Purpose. To develop proficiency with external cargo operations and introduce external cargo operations in confined areas with close coordination of a Helicopter Support Team (HST).

b. General. At the completion of this stage, the CC/AOUI will be able to demonstrate the ability to assist the pilot in day external cargo operations from confined areas. CRM shall be discussed as applicable to each event.

c. Crew Requirement. CC, CC/CCUI.

d. Ground/Academic Training. Read appropriate chapters of the NATOPS Manual and Air NTTP 3-22 publications.

e. Flight Training. (1 Flight, 1.5 Hours).

EXT-221 1.5 R,O 1 CH-46E A

Goal. Conduct external load operations to a confined area.

Requirement

Discuss:
CRM.
Communication procedures.
Aircraft emergencies during external operations.
Load jettison procedures.
Capabilities and limitations of the hook.
Cargo hook preparation.
Standard terminology.
Lost communication procedures/hand signals.

Introduce:
HST procedures.

Performance Standards. Demonstrate the ability to give commands to the pilot at the controls of the aircraft to effect hookup and delivery the load within 5 meters of

intended point of delivery with minimal difficulty utilizing standard terminology while maintaining obstacle clearance.

Prerequisite. CAL-211.

External Syllabus Support. HST, external load and pickup/drop zone.

4. Formation Flight (FORM)

a. Purpose. To review formation and introduce tactical formation maneuvering.

b. General. At completion of this stage, the CC/AOUI will demonstrate the ability to assist the pilot during day or night formation flight operations. CRM shall be discussed as applicable to each event.

c. Crew Requirement. CC/AGO, CC/CCUI or CC/AGOUI.

d. Ground/Academic Training. Review tactical formations as listed in the Air NTTP 3-22publications. and MAWTS-1 ASP.

e. Flight Training. (1 Flight, 1.5 Hours).

FORM-231 1.5 R 2+ CH-46E A

Goal. Review formation and introduce tactical formation maneuvering.

Requirement

Discuss:
- CRM.
- Crew comfort levels.
- Lead changes.
- Standard terminology.
- Tactical formation maneuvering.
- Aircraft clearance.
- Appropriate formation maneuvers against a F/W threat, R/W threat, IR missile threat, radar guided missile threat, and AAA threat.
- Intra and inter aircraft communications.
- Distance estimation.

Introduce:
- Break turns, center turns, pinch/dig, cover, TAC turns, in-place turns, and cross turns.
- Combat spread and combat cruise formations.

Review:
- Lookout procedures.
- Communication procedures.

Performance Standards. Demonstrate the ability to perform and understand TAC FORM maneuvering.

Prerequisite. FAM-201.

5. Terrain Flight (TERF)

a. Purpose. To qualify the CC/AGOUI in TERF and TERF navigation and to emphasize the importance of crew coordination, crew comfort level, and standard terminology.

b. General

(1) An enlisted TERFI (ETERFI) is required for this stage of instructional flight.

(2) Successful completion of TERF-243 constitutes TERF qualified. A qualification letter signed by the commanding officer stating the CC/AGOUI is TERFQ is required. The original shall be placed in the CC/AGOUI NATOPS jacket, and a copy in the APR with a corresponding logbook entry.

(3) T&R Program Manual establishes TERF altitude restrictions and currency requirements.

c. Crew Requirement. CC/AGO, ETERFI/CCUI or ETERFI/AGOUI.

d. Ground/Academic Training

(1) CH-46 Crew Chief TERF Course, listed in the MAWTS-1 Course Catalog prior to beginning this stage of training.

(2) Familiarity with Air NTTP 3-22 publications and T&R Program Manual.

e. Flight Training. (3 Flights, 4.5 Hours).

TERF-241	1.5	1 CH-46E A

Goal. TERF maneuvers.

Requirement

Discuss:
- CRM.
- Crew comfort levels.
- Obstacle clearance.
- Lookout doctrine.
- Emergencies during low level operations.
- TERF maneuvers.
- Differences between TERF flight regimes.

Introduce:
- TERF maneuvers/blade walk procedures.

Review:
- TERF maneuvers and aircraft clearance.

Performance Standards. Demonstrate knowledge of TERF maneuvers in tactical situations.

External Syllabus Support. TERF area (restricted area preferred).

TERF-242 1.5 R 1 CH-46E A

Goal. Assist the pilots in navigation of a TERF route in the low level and contour profile.

Requirement

Discuss:
CRM.
Crew comfort level.
Communication.
Map/NAV procedures.
Terrain recognition.
Obstacle clearance.

Introduce:
Assist pilots in navigation, use of checkpoints, barrier features and prominent terrain features.

Review:
Map/Nav procedures, emergency procedures during low level operations, and blade walk procedures.

Performance Standards. Assist pilots in navigation of a minimum of five checkpoints at or below 200' AGL remaining oriented on route within 500 meters.

Prerequisite. TERF-241.

External Syllabus Support. TERF route (restricted area preferred).

TERF-243 1.5 R, O 2 CH-46E A

Goal. Review TERF/Nav procedures and demonstrate the ability to navigate a TERF route in the contour and low level profiles. TERF evaluation/review.

Requirement

Discuss:
CRM.
CC/AGO responsibilities during low altitude flight.
Communication.
Navigational assistance.
Lookout doctrine.
Low altitude emergency procedures.
Multi-aircraft operations.
Threat awareness.
Lead changes.
Tactical formation maneuvering.
Crew comfort level.
Map and navigation procedures.

Review:
TERF-241 and TERF-242.

Performance Standards. Demonstrate knowledge of terrain flight as it applies to the CH-46E and assist pilots in navigation of a minimum of five checkpoints at or below 200' AGL remaining oriented on route within 500 meters.

Prerequisite. TERF-242.

External Syllabus Support. TERF route (restricted area preferred).

6. Night Systems (NS), High Light Level (HLL)

a. Purpose. To develop skill in the use of NS under light levels greater than .0022 LUX (HLL)) as predicted by the computer generated light level calendar and to qualify the CC/AGO in NS HLL operations.

b. General

(1) All initial and Refresher flights require a Enlisted Night Systems Instructor (ENSI).

(2) Successful completion of NS-257 constitutes Night Systems Qualified (NSQ HLL). A qualification letter, signed by the commanding officer stating the CC/AOUI is NSQ HLL is required to be qualified to carry troops under HLL conditions. The original shall be placed in the CC/AGOUI's NATOPS jacket, and a copy in his APR with a corresponding logbook entry.

c. Crew Requirement. CC/AO, ENSI/CCUI or ENSI/AOUI.

d. Prerequisite. CAL-211.

e. Academic Training. CH-46 Night Systems Operations Course as listed the MAWTS-1 Course Catalog shall be completed prior to conducting NS flights.

f. Flight Training. (7 Flights, 10.5 Hours).

NS-251 1.5 R, O 1 CH-46E A NS

Goal. Introduce NS single aircraft CALs in HLL.

Requirement

Discuss:
- CRM.
- Crew comfort levels.
- NS use and limitations.
- NS failures.
- Emergencies.
- Inadvertent IMC.
- Aircraft lighting.
- Light discipline
- Use of IR searchlight.
- Depth perception.
- Obstacle clearance.

Introduce:
- CALs at various unlit CAL sites.

Review:
- CAL-211.

Performance Standards. Utilizing NS, demonstrate the ability to clear the aircraft for landing into confined areas while recognizing closure rate, drift error and effectively utilizing proper distance estimation and depth perception utilizing NS.

Prerequisite. CAL-211.

External Syllabus Support. NS landing zones.

NS-252 1.5 2 CH-46E A NS

Goal. Conduct NS formation flight in HLL.

Requirement

Discuss:
- CRM.
- Crew comfort levels.
- Lead changes.
- Aircraft lighting.
- Closure rate.
- Distance estimation.
- NS procedures and emergencies.
- Relative motion and depth perception problems at night.
- Lookout doctrine.

Introduce:
- NS formation flight.

Review:
- FORM-231.

Performance Standards. Demonstrate the ability to conduct formation flight while utilizing NS.

Prerequisite. FORM-231 and NS-251.

External Syllabus Support. None.

NS-253 1.5 R,O 2 CH-46E A NS

Goal. Introduce section NS tactical section approaches, landings, and departures to a confined area in HLL.

Requirement

Discuss:
- CRM.
- Crew comfort levels.
- NS navigation techniques.
- NS failures.
- Emergencies.
- Inadvertent IMC.
- Aircraft lighting.
- Use of IR searchlight.
- Depth perception.
- Obstacle clearance.

Review:
Section takeoffs/landings at various unlit CAL sites.

Performance Standards. Utilizing NS, demonstrate the ability to clear the aircraft for landing into confined areas while recognizing closure rate, drift error and effectively utilizing proper distance estimation and depth perception. Maintain SA of wingman throughout the evolution.

Prerequisite. CAL-212 and NS-252.

External Syllabus Support. NS landing zones that accommodate multiple aircraft.

NS-254 1.5 3+ ACFT A NS

Goal. Conduct NS division formation and CALs.

Requirement

Discuss:
CRM.
Crew comfort levels.
NS division takeoffs and landings.
NS formation techniques.
Inadvertent IMC.
Obstacle clearance.
Lookout doctrine.
Standard terminology.

Introduce:
NS division CALs.

Review:
NS-253.

Performance Standards. Utilizing NS, demonstrate the ability to clear the aircraft for landing into confined areas while recognizing closure rate, drift error and effectively utilizing proper distance estimation and depth perception. Maintain SA of the division throughout the evolution.

Prerequisite. NS-253.

External Syllabus Support. NS landing zones that accommodates multiply aircraft.

NS-255 1.5 1 CH-46E A NS

Goal. Conduct NS TERF navigation.

Requirement

Discuss:
CRM.
Crew comfort levels.
Obstacle clearance.
Lookout doctrine.
NS navigation techniques.
Emergencies during low level operations.

Introduce:
NS TERF NAV procedures.

Review:
Map, orientation, and NS navigation techniques.
Navigation along a predetermined route of at least 5 checkpoints remaining oriented along the route.

Performance Standards. Demonstrate the ability to assist the pilots in navigation of a minimum of 5 checkpoints remaining oriented on route within 500 meters while utilizing NS.

Prerequisite. TERF qualified and NS-251.

External Syllabus Support. NS TERF route (special use airspace preferred).

NS-256 1.5 O 2 CH-46E A NS

Goal. Conduct NS TERF formation flight.

Requirement

Discuss:
Crew comfort levels.
CRM.
NS navigation techniques.
NS formation techniques.
Emergency procedures during night low level operations.
NS failures.
Inadvertent IMC.
Lookout doctrine.

Introduce:
NS TERF NAV.

Review:
NS formation techniques to include parade position, cruise principles, crossovers, breakup and rendezvous and lead changes.
NS navigation techniques.

Performance Standards. Demonstrate the ability to assist the pilots in navigation of a minimum of 5 checkpoints at or below 200' AGL remaining oriented on route within 500 meters while utilizing NS.

Prerequisite. TERF qualified, NS-252 and 255.

External Syllabus Support. NS TERF route (restricted area preferred).

NS-257 1.5 R,O 2 CH-46E A NS

Goal. Conduct/evaluate NS TERF formation, navigation, and section CALs.
Requirement

Discuss:
CRM.

Crew comfort levels.
Tactical formations.
NS procedures and emergencies.
Aircraft lighting.
NS navigation techniques.
Low altitude emergencies.
Inadvertent IMC.

Performance Standards. Demonstrate the ability to conduct NS HLL TERF, navigation, formation flight, and CALS in a HLL environment.

Prerequisite. NS-254, and 256.

External Syllabus Support. NS landing zones and approved TERF route (special use airspace preferred).

7. Air-to-Ground (AG)

a. Purpose. To develop proficiency/CRM skills with crew served weapons and aerial gunnery procedures.

b. General

(1) Initial instructional flights shall be conducted by a designated EWTI or AGI.

(2) At the completion of this stage, the aircrew will demonstrate knowledge of weapons systems and proficiency during day weapons delivery.

c. Crew Requirement. CC/AGO, AGI/CCUI or AGI/AGOUI.

d. Ground/Academic Training

(1) Academic training will be conducted by a EWTI or AGI.

(2) CH-46 Crew Member Aerial Gunnery Academic Course, using the MAWTS-1 ASP. Courses are listed in the MAWTS-1 Course Catalog.

e. Simulator/Flight Training. (1 Event, 1.5 Hours, 3 Flights, 4.5 Hours).

SAG-280 1.5 WST

Goal. Introduce the CCUI/AGUI to aerial gunnery procedures.

Requirement

Discuss:
CRM.
ICS procedures.
Safety.
Weapons conditions.
Weapons commands.
Weapons malfunctions/stoppages/emergencies.
Crew served weapons checklist application.
Muzzle awareness.
Weapons preparation/nomenclature.

Introduce:
Day aerial gunnery while firing on pre-briefed targets.

Review:
Assault Support Aerial Gunnery Manual and CH-46E Tactical Manuals.

Performance Standards. Demonstrate the ability to conduct day aerial gunnery.

Prerequisite. Aerial Gunnery Academic Course as listed in the MAWTS-1 ASP.

External Syllabus Support. Crew served aerial gunnery simulator capable of demonstrating day air-to-ground/air-to-air gunnery. The trainer must be capable of being tied to the pilot simulator.

AG-281 1.5 1+ CH-46E A

Goal. Introduce the CCUI/AGOUI to aerial gunnery procedures.

Requirement

Discuss:
CRM.
ICS procedures.
Safety.
Weapons conditions.
Weapons commands.
Weapon malfunctions/emergencies.
Crew served weapons checklist.
Aiming techniques.
Muzzle awareness.
Weapons preparation/nomenclature.

Introduce:
Preparation of weapons and aircraft.
Aerial gunnery employment.
Firing on pre-briefed targets.

Review:
Assault Support Aerial Gunnery Manual.

Performance Standards. Demonstrate the ability to properly employ the .50 cal weapon during day aerial gunnery and hit the target with 50% of the rounds fired at the target.

Prerequisite. SAG-280.

Ordnance. 500 rounds .50 cal.

Range requirements. Appropriate aerial gunnery range equipped with multiple scored targets ranging from APC size to personnel.

AG-282 1.5 R,O 2 CH-46E A

Goal. Introduce multi-aircraft weapons employment considerations.

Requirement

Discuss:
CRM.
ICS procedures.
Safety.
Weapons conditions.
Weapons commands.
Weapon malfunctions/emergencies.
Crew served weapons checklist.
Aiming techniques.
Muzzle awareness.
Weapons preparation/nomenclature.
Formation flight during aerial gunnery.

Introduce:
Multi-aircraft operations.
Sectors of fire.
Firing on pre-briefed targets while aircraft is maneuvering to include running, diving, and hover fires.

Review:
Preparation of weapons and aircraft.
Aerial gunnery procedures.

Performance Standards. Demonstrate ability to properly employ the .50 cal weapon during day aerial gunnery within a section of aircraft and hit the target with 50% of the rounds fired at the target.

Prerequisite. AG-281.

Ordnance. 500 rounds .50 cal.

Range requirements. Appropriate aerial gunnery range equipped with multiple scored targets ranging from APC size to personnel.

AG-283 1.5 R, O 1 CH-46E A

Goal. Introduce aerial gunnery against a moving target.

Requirement

Discuss:
CRM.
ICS procedures.
Safety.
Weapons conditions.
Weapons commands.
Weapons malfunctions/emergencies.
Crew served weapons checklist.
Aiming techniques.
Muzzle awareness.
Weapons preparation/nomenclature.
Mil sight values/range estimation.
Lead techniques.

Introduce:
Preparation of weapons and aircraft.

Aerial gunnery against a moving target.
Firing on pre-briefed targets.
Lead techniques at a moving target.

Review:
Assault Support Aerial Gunner Manual and CH-46E Tactical Manual.

Performance Standards. Demonstrate the ability to employ the weapon at a moving target and hit the target with 50% of the rounds fired at the target.

Prerequisite. AG-282.

Ordnance. 500 rounds .50 cal.

External Syllabus Support. Appropriate aerial gunnery range configured with a scored moving target.

8. Carrier Qualification (CQ)

a. Purpose. To qualify the crewmember in day, night unaided, and NS FCLPs.

b. General. Refer to LHA/LPH/LHD NATOPS Manuals and NWP-42 for Shipboard Operations.

(1) An ENSI is required for initial/refresher NS FCLP flights.

(2) Night CQ Requirements:

(a) For initial/Refresher/delinquent:

1 Five day FCLPs.

2 Five NS FCLPs.

(b) Aircrew previously night CQ and proficient shall complete the following to maintain proficiency:

1 Two day FCLPs.

2 Two NS FCLPs. (Note: CQ-293 chains CQ-292 and CQ-291).

(3) CQ-293 may be flown under any light level condition. CCUI/AGOUI must be NSQ for appropriate light level.

(4) Aircrew shall discuss CRM as applicable to each event.

c. Crew Requirement

(1) CQ-291 require CC or CC/CCUI.

(2) CQ-293 requires either CC/AGO, ENSI/CCUI, or ENSI/AGOUI.

d. Ground/Academic Training. Review appropriate LHA/LPH/LHD NATOPS Manual and NWP-42 for carrier operations.

e. Flight Training. (2 Flights, 2.0 Hours).

CQ-291 1.0 O 1 CH-46E A

Goal. Conduct day FCLPs.

Requirement

Discuss:
CRM.
Communications.
LSE signals.
Landing direction.
Water landings.
Salt encrustation.
Waveoff.
Crew comfort levels.
Lookout doctrine.

Introduce:
Day FCLP patterns, approaches, landings, and emergency procedures peculiar to shipboard operations.

Review:
Appropriate LHA/LPH/LHD NATOPS Manual and NWP-42 for carrier operations.

Performance Standards. Demonstrate the ability/knowledge to perform shipboard flight operations to include LSE hand and arm signals.

Prerequisite. CAL-211.

External Syllabus Support. Approved FCLP pad.

CQ-293 1.0 O 1 CH-46E A NS

Goal. Introduce NS FCLP patterns.

Requirement

Discuss:
CRM.
Communications.
LSE signals.
Aircraft lighting.
Wave off.
Crew comfort levels.
Lookout doctrine.
NS procedures/operations.

Introduce:
NS FCLP patterns, approaches, landings, and emergency procedures peculiar to shipboard operations. Use LSE light signals if available.

Review:
CQ-291

Performance Standards. Demonstrate the ability/knowledge to perform NS shipboard flight operations to include LSE hand and

arm signals and be able to assist the pilot to land within 1 meter of intended point of landing.

Prerequisite. NS-251 and CQ-291.

External Syllabus Support. Approved FCLP pad.

233. CORE SKILL ADVANCED PHASE

1. Carrier Qualification (CQ)

a. Purpose. To train/refresh the CC/AGO in day and NS CQs.

b. General

(1) Refer to LHA/LPH/LHD NATOPS Manuals and NWP-42 for air capable ship operations.

(2) Night CQ Requirements

(a) Requirements for initial/Refresher/delinquent qualification are:

1 Five day CQs.

2 Five NS CQs.

(b) CC/AGOs previously night carrier qualified and proficient per para 2(a) above shall complete the following to maintain proficiency:

1 Two day CQs.

2 Two NS CQs. (Note: CQ-301 chains CQ-300 and CQ-491)

(3) CQ-301 shall be flown under HLL conditions for initial/refresher qualification. ENSI required for initial/refresher NS flights. Currency and re-qualification flights may be flown under any light level condition.

(4) CC/AGO is CQ on completion of CQ-300, CQ-301.

(5) CC/AGOs are authorized to carry passengers during daylight hours when proficient in CQ-300.

(6) CC/AGOs are authorized to carry passengers when proficient and current in CQ-301and for the appropriate light level.

(7) CC/AGO shall discuss CRM as applicable to each event.

c. Crew Requirement

(1) CQ-300 requires CC or CC/CCUI.

(2) CQ-301 requires either CC/AO, ENSI/CCUI, or ENSI/AOUI.

d. Ground/Academic Training. None.

e. Flight Training. (2 Flights, 2.0 Hours).

CQ-300	1.0	O 1 CH-46E A

Goal. Conduct day CQ.

Requirement

Discuss:
CRM.
Communications.
LSE signals.
Shipboard procedures.
Wave off.
Crew comfort levels.
Lookout Doctrine.
Emergency procedures during shipboard operations.

Introduce:
Day carrier landing procedures.

Review:
Day FCLP patterns.
Approaches.
Landings.
Emergency procedures peculiar to shipboard operations.

Performance Standards. Demonstrate the ability/knowledge to perform shipboard flight operations to include LSE hand and arm signals and be able to assist the pilot to land within 1 meter of intended point of landing.

Prerequisite. CQ-291 (if available).

External Syllabus Support. Air capable ship deck.

CQ-301 1.0 R,O 1 CH-46E A NS

Goal. Conduct NS CQ.

Requirement

Discuss:
CRM.
Communications.
LSE signals.
NS procedures/operations.
Aircraft lighting.
Shipboard lighting.
Wave off.
Crew comfort levels.
Lookout doctrine.

Introduce:
NS carrier landings.

Review:
NS FCLP patterns, approaches, landings, and emergency procedures peculiar to shipboard operations.

Performance Standards. Demonstrate the ability/knowledge to perform NS shipboard flight operations to include LSE hand and arm signals and be able to assist the pilot to land within 1 meter of intended point of landing.

Prerequisite. CQ-293 (if available) and CQ-300.

External Syllabus Support. NS capable ship deck.

2. Night Systems (NS), Low Light Level (LLL)

a. Purpose. To qualify the CC/AGOUI in NS LLL flight operations.

b. General

(1) An ENSI is required for this stage.

(2) Successful completion of NS-314 constitutes NSQ. A qualification letter signed by the commanding officer stating the CC/AGOUI is NSQ is required to carry troops under any ambient light level condition. The original shall be placed in the CC/AGOUI's NATOPS jacket and APR with a corresponding logbook entry.

(3) Prerequisite

(a) Aircrew shall be NSQ HLL.

(b) All initial/Refresher flights require a ENSI.

(c) Aircrew shall fly all events in light levels less than .0022 lux.

c. Crew Requirement. CC/AO, ENSI/CCUI or ENSI/AOUI.

d. Ground/Academic Training

(1) Appropriate chapters of the MAWTS-1 NVD Manual.

(2) Read appropriate chapters of the NATOPS manual.

(3) Read appropriate paragraphs of the Air NTTP 3-22 publications.

e. Flight Training. (4 Flights, 6.0 Hours).

NS-311 1.5 R,O 1 CH-46E A NS

Goal. Introduce single aircraft NS LLL CALs.

Requirement

Discuss:
CRM.
Crew comfort levels.
NS failures.
Emergencies.
Inadvertent IMC.
Aircraft lighting.
Distance estimation.
Depth perception.
Effects of LLL environment on NS.
Wave off/brownout procedures.

Introduce:
Confined area takeoffs and landings at various unlit CAL sites under LLL conditions.

Review:
NS-251.

Performance Standards. Demonstrate the ability to clear the aircraft for landing into confined areas while recognizing closure rate, drift error and effectively utilizing proper distance estimation and depth perception.

Prerequisite. NS-257.

External Syllabus Support. CAL site.

NS-312 1.5 R 2 CH-46E A NS

Goal. Introduce NS LLL section CALs.

Requirement

Discuss:
CRM.
Crew comfort levels.
NS navigation techniques.
NS failures.
Emergencies.
Inadvertent IMC.
Aircraft lighting.
Depth perception.
Distance estimation.
Wingman position.
Wave off/brownout procedures.

Introduce:
LLL section CALS.

Review:
Section takeoffs and landings at various unlit CAL sites.

Performance Standards. Demonstrate the ability to clear the aircraft for landing into confined areas while recognizing closure rate, drift error and effectively utilizing proper distance estimation and depth perception. Maintain SA of the wingman throughout the evolution.

Prerequisite. NS-311.

External Syllabus Support. CAL site.

NS-313 1.5 R,O 3+ ACFT A NS

Goal. Conduct NS LLL formation and division CALs.

Requirement

Discuss:
CRM during NS LLL formation.
Crew comfort level during NS LLL formation operations.
External aircraft lighting considerations during NS LLL formation operations.

Introduce:
NS LLL formation.
NS LLL division CALs.

Review:
NS-254.

Performance Standards. Demonstrate the ability to clear the aircraft for landing into confined areas while recognizing closure rate, drift error and effectively utilizing proper distance estimation and depth perception. Maintain SA of the division throughout the evolution.

Prerequisite. NS-312.

External Syllabus Support. CAL sites.

NS-314 1.5 R,O 2 CH-46E A NS

Goal. Conduct NS LLL TERF formation, navigation and section CALS. This flight is the NS LLL evaluation/review for certification as NSQ.

Requirement

Discuss:
CRM.
Crew comfort levels.
Obstacle clearance.
Lookout doctrine.
NS navigation techniques.
Emergencies during low level operations.
Depth perception
Distance estimation.
Wave off/brownout procedures.

Introduce:
LLL TERF/NAV.

Review:
Map preparation, orientation, and NS navigation techniques.
Navigation along a predetermined route of at least 5 checkpoints remaining oriented along the route.
Aircraft operations in a LLL environment.

Performance Standards. Demonstrate the ability to conduct NS section TERF, NAV, CALs and formation flight in a LLL environment.

Prerequisite. NS-313.

External Syllabus Support. CAL site and approved NS navigation route.

3. Air-to-Ground (AG)

a. Purpose. To qualify the CCUI/AOUI with NS crew served weapon AG procedures.

b. General

(1) Aerial gunnery qualification lectures and initial instructional flights in this stage shall be conducted by a designated EWTI or NSI/AGI.

(2) Successful completion of AG-322 constitutes Aerial Gunnery Qualified (AGQ). A qualification letter signed by the commanding officer stating the CC/AGOUI is AGQ is required. The original shall be placed in the CC/AGOUI's NATOPS jacket and APR with a corresponding logbook entry.

(3) The AGOUI or CCUI must be NSQ for the appropriate light level being flown before flying any NS aerial gunnery flights.

(4) Laser aiming devices are required for AG-321 and AG-322.

c. Crew Requirement. CC/AG, ENSI-AGI/CCUI or ENSI-AGI/AGOUI.

d. Ground/Academic Training. Prior to conducting this stage of training, the Laser Safety class from the MAWTS-1 ASP shall be taught.

e. Prerequisite. AG-281, AG-282 and AG-283.

f. Simulator/Flight Training. (1 Event, 1.5 Hours, 2 Flights, 3.0 Hours).

SAG-320 1.5 WST NS

Goal. Introduce the CCUI/AGUI to NS aerial gunnery procedures.

Requirement

Discuss:
- CRM.
- ICS procedures.
- Safety.
- Weapons conditions.
- Weapons commands.
- Weapons malfunctions/stoppages/emergencies.
- Crew served weapons checklist application.
- Muzzle awareness.
- Weapons preparation/nomenclature.
- Effects while on NS.
- Laser aiming devices/procedures.

Introduce:
- NS aerial gunnery while firing on pre-briefed targets.

Review:
- MAWTS-1 Assault Support Aerial Gunnery Manual and CH-46E Tactical Manuals.

Performance Standards. Demonstrate the ability to conduct NS aerial gunnery.

Prerequisite. AG-281, 282, and 283.

External Syllabus Support. Crew served aerial gunnery simulator capable of demonstrating NS air-to-ground/air-to-air

gunnery. The trainer must be capable of being tied to the pilot simulator.

AG-321 1.5 1 CH-46E A NS

Goal. Introduce NS AG gunnery.

Requirement

Discuss:
- CRM.
- ICS procedures.
- Safety.
- Weapons conditions.
- Weapons commands.
- Weapons malfunctions/stoppages/emergencies.
- Crew served weapons checklist application.
- Muzzle awareness.
- Weapons preparation/nomenclature.
- Effects while on NS.
- Laser aiming devices/procedures.

Introduce:
- NS weapons employment techniques.
- Firing on pre-briefed targets while wearing NS.

Review:
- All previous aerial gunnery work.

Performance Standards. Demonstrate knowledge of the cycle of operation, nomenclature, employment of the XM-218 .50 cal machine gun. Demonstrate the ability to fire at pre-briefed targets while utilizing NS and hit the target with 50% of the rounds fired at the target.

Prerequisite. SAG-320.

Ordnance. 500 rounds .50 cal, laser aiming device.

Range requirements. Appropriate Laser authorized aerial gunnery range equipped with multiple scored targets ranging from APC size to personnel.

AG-322 1.5 R,O 2 CH-46E A NS

Goal. Demonstrate proficiency with NS weapons employment in a multi-aircraft flight. This is the aerial gunner evaluation/review flight.

Requirement

Evaluate/Review:
- ICS procedures.
- Safety.
- Weapons conditions.
- Weapons commands.
- Weapons malfunctions/stoppages/emergencies.
- Crew served weapons checklist application.
- Muzzle awareness.
- Weapons preparation/nomenclature.

Effects while on NS.
Laser aiming devices/procedures.

Introduce:
Firing on pre-briefed targets while aircraft is maneuvering; e.g., running, diving, and hover fires (while wearing NS).

Review:
AG-321.

Performance Standards. Demonstrate knowledge of ballistics, the cycle of operation, nomenclature and employment of the XM-218 .50 cal machine gun. Demonstrate the ability to fire at pre-briefed targets while utilizing NS and hit the target with 50% of the rounds fired at the target.

Prerequisite. AG-321.

Ordnance. 500 rounds .50 cal, laser aiming device.

Range requirements. Appropriate Laser authorized aerial gunnery range equipped with multiple scored targets ranging from APC size to personnel.

4. Ground Threat Reaction (GTR)

a. Purpose. To introduce and develop proficiency in using Aircraft Survivability Equipment (ASE), tactics, and on-board defensive weapon systems to evade ground-to-air threats.

b. General

(1) Conduct GTR-331 against simulated surface to air fires (smokey SAMS, MADSS, Malina/BARC, hand-held pyrotechnics, etc.) and 332 against threat emitters (e.g. SA-8, ZSU 23-4, etc.) and use ground based threat simulation.

(2) Refer to NTRP 3-22.4 Naval Aviation Technical Information Publication (NATIP) and the Air NTTP 3-22.3 for ASE operating procedures. Refer to Air NTTP 3-22.3 Appendix B for GTR training standards.

(3) .50 cal machine guns should be mounted for all GTR flights. M240 Ramp Fired Weapon (RFW) may be employed in accordance with NATOPS.

(4) GTR flights will be conducted no lower than 50ft.

(5) Enlisted Aircrew instructors shall not have lookout duties during initial training events.

(6) All initial flights shall be conducted during the daytime and require a GTR-proficient WTI or DMI.

(7) All event participants shall attend the recommended academic training and flight brief. A walkthrough should be conducted.

c. Prerequisites

(1) TERF qualified.

(2) FORM-231.

(3) When conducted at night, all aircrew shall be NSQ (for the appropriate light level).

d. Minimum Crew Requirements. CC/AGO, EDMI or EWTI/CCUI/AGO, EDMI or EWTI/CC/AGOUI, EDMI or EWTI/CCUI/CCUI, EDMI or EWTI/AGOUI/AGOUI.

e. Ground/Academic Training. Utilize academic courseware as outline in the MAWTS-1 Course Catalog and Air NTTP 3-22.3 Appendix B. Additional training should consist of:

(1) Current theater specific ROE training from a Staff Judge Advocate.

(2) Enemy situation to include threat systems and related tactics.

GTR-331 1.5 R 2 CH-46E A (NS)

Goal. Introduce ground threat reactions in a non-radar environment.

Requirement

Discuss:
CRM/inter-flight coordination.
Crew comfort level.
Lookout doctrine.
Situational awareness.
Use of ALE-39/47, APR-39, ALQ-157, and AAR-47 and ASE Go/No-Go procedures.
Use of terrain masking, maneuver, IR jammers, and flares to defeat threat IR missiles.
Tactical expendables.
Various threat signatures with emphasis on threat recognition.
Tactical employment of .50 cal weapon system/RFW against ground threats.
Aerial gunnery, POO, ROE, PID, and engagement criteria.
Intra aircraft communication.

Introduce:
GTR against non-radar threat systems emphasizing use of all onboard ASE and defensive weapon systems.
Threat avoidance maneuvers and tactics to counter threat systems.
Appropriate evasive maneuvers when engaged by a non-radar ground based threat.

Review:
AG-322.

Performance Standards. All aircrew shall demonstrate proper operation of ASE, understanding and interpretation of AAR indications, effective maneuvering in response to threat, and proper ASE employment with regard to the threat.

Prerequisite. FORM-231, AGQ.

Ordnance. 60 flares, 2 x .50 cal weapon systems, 400 rnds .50 cal, (RFW), (500 rnds 7.62mm).

Range Requirements. Live fire range and threat simulation devices (smokey SAMS, MADSS, Malina/BARC, hand-held pyrotechnics, etc.) with sufficient range space to employ and maneuver at least a division of aircraft.

GTR-332 1.5 R 2 CH-46E A (NS)

Goal. Introduce ground threat reactions in a radar environment.

Requirement

Discuss:
- CRM/inter-flight coordination.
- Crew comfort level.
- Lookout doctrine.
- Situational awareness.
- Use of ALE-39/47, APR-39, ALQ-157, and AAR-47 and ASE Go/No-Go procedures.
- Use of RADAR horizons, RADAR masking, maneuver and chaff to defeat threat RADAR systems.
- Use of terrain masking, maneuver, and chaff to defeat threat radar missiles.
- Tactical expendables.
- Various threat signatures with emphasis on threat recognition.
- Tactical employment of .50 cal weapon systems/RFW against ground threats.
- Aerial gunnery, POO, ROE, PID, and engagement criteria.
- Intra/inter aircraft communication.
- Tactical formation maneuvering.

Introduce:
- GTR against RADAR threat systems emphasizing use of all onboard ASE and defensive weapon systems.
- Threat avoidance maneuvers and tactics to counter threat systems.
- Appropriate evasive maneuvers when engaged by a ground based threat in a radar environment.

Review:
- FORM-231.

Performance Standards. All aircrew shall demonstrate proper operation of ASE, understanding and interpretation of APR indications, ability to break lock when tracked, effective

maneuvering in response to threat, and proper ASE employment with regard to threat.

Prerequisite. FORM-231 and AGQ.

Ordnance. 40 chaff, 20 flares, 2 x .50 cal weapon systems, (RFW).

Range Requirements. EW range with functional EW emitter and threat simulation devices (e.g. SA-8, ZSU 23-4, smoke grenades or pyrotechnics, etc.) with sufficient range space to employ and maneuver at least a division of aircraft.

5. Mountain Area Training (MAT)

a. Purpose. To develop proficiency in mountainous terrain operations.

b. General. At the completion of this stage of training aircrew will be familiar with operating procedures of MAT operations.

c. Crew Requirement. CC or CC/CCUI.

d. Academic Training. Refer to appropriate chapters in the NATOPS Manual for discussion on mountain landing zone characteristics.

e. Flight Training. (1 Flight, 1.5 Hours).

MAT-351 1.5 R, O 1 CH-46E A

Goal. Conduct mountainous terrain operations.

Requirement

Discuss:
- CRM.
- Standard terminology.
- Crew comfort levels.
- Landing site evaluation/terrain suitability.
- Effects of high altitude on aircraft performance.
- Emergency procedures.
- Aircraft clearances.
- Main mount/pinnacle landing procedures.

Introduce:
- Effects of wind in mountainous terrain.
- Landing on pinnacles.
- Landing on slopes.
- Landing in valleys and canyons.
- Crosswind, upslope, and down slope landings with respect to tail clearance.

Performance Standards. Demonstrate ability and knowledge of landing in mountainous terrain.

Prerequisite. CAL-211.

External Syllabus Support. Range that supports MAT.

6. Helicopter Insertion/Extraction (HIE)

a. Purpose. To develop proficiency in HIE procedures.

b. General

(1) Pilot, copilot, crew chief, HRST Master and HRST Safety Observer shall brief together prior to commencing fastrope, rappelling, SPIE, and helocast/soft duck.

(2) The Jump Master is responsible for the safe and proper rigging of the aircraft for conduct of paraops and cargo drops. The crew chief shall preflight aircraft rigging.

(3) ICS cranials/gunner's belts required for Jump Master/Cast Master.

(4) Aircrew must be NSQ for flights conducted on NS.

c. Crew Requirement

(1) HIE-361 requires CC or CC/CCUI.

(2) HIE-362 requires CC/AGO, ENSI/CCUI or ENSI/AGOUI.

d. Ground/Academic Training

(1) Review Air NTTP 3-22 publications and applicable Force Orders/SOPs.

(2) Applicable courses from the MAWTS-1 course catalog.

e. Flight Training. (2 Flights, 3.0 Hours).

HIE-361 1.0 R,O 1 CH-46E A

Goal. Conduct airborne insertion/extraction (fastrope and rappel) procedures.

Requirement

Discuss:
HIGE/HOGE requirements.
CRM (pilots, crew chief, HRST master, and safety observer brief together).
ICS procedures and standard terminology.
ICS failure/hand and arm signals.
Current Force Order/Wing SOP.
Obstacle clearance and waveoff.
Emergency procedures.
Lookout doctrine.
Weapons employment.

Introduce:
Preflight of the fastrope/rappelling equipment and rigging.
Assisting the pilot in maintaining an extended hover.
Troop insertion via fastrope/rappelling.
Hand and arm signals.

Review:
Fastrope and rappel procedures.

Performance Standards. Demonstrate knowledge and ability to conduct day fastrope/rappelling.

Prerequisite. CAL-211 and EXT-221.

External Syllabus Support. Applicable HIE support equipment.

HIE-362 1.0 O 1 CH-46E A NS

Goal. Introduce NS fastrope and rappel procedures.

Requirement

Discuss:
CRM during NS HIE operations.
NS considerations during NS HIE operations.
Emergency procedures during NS HIE operations.

Introduce:
NS fastrope and rappel procedures.

Review:
Preflight of associated equipment and rigging.
Skills involved for holding an extended hover.
Troop insertion/extraction techniques.

Performance Standards. Demonstrate knowledge and ability to conduct NS fastrope/rappelling.

Prerequisite. HIE-361, EXT-392.

External Syllabus Support. Applicable HIE support equipment.

7. Tactics (TAC) Low and Medium Threat

a. Purpose. To introduce and develop proficiency in the execution of assault support operations in the following mission areas in a low and medium threat environment. Use MCCRES Volume III, Section A, Standards:

(1) Helicopter Assault Operation [MPS 3A.4].

(2) Noncombatant Evacuation Operation (NEO) [MPS 3A.7].

(3) Raid [MPS 3A.8].

(4) Security/Reinforcement [MPS 3A.9].

(5) Reconnaissance Patrol/Reaction Force Operation [3A.10].

(6) Medical Evacuation [MPS 3A.1].

(7) Tactical Recovery of Aircraft, Equipment, and Personnel (TRAP) [MPS 3A.12].

b. General

(1) CCUI shall attend the mission brief.

(2) Every attempt should be made to expend the required .50 cal rounds. However, this should not restrict the completion of the event.

Squadron ordnance shall mount .50 caliber machine guns for all tactical flights.

(3) CCUI/AGOUI shall be AG qualified prior to beginning this stage.

(4) CCUI/AGOUI shall be NSQ for the light level being flown.

(5) Aircrews shall discuss CRM as applicable to each event.

(6) Enlisted WTIs should be required for initial flights.

c. Crew Requirement. CC/AGO, CC/CCUI, or CC/AGOUI.

d. Ground/Academic Training. Basic Principles of Escort Operations and Tactical Recovery of Aircraft and Personnel (TRAP) as listed in the MAWTS-1 ASP shall be taught by an EWTI prior to starting this stage.

e. Flight Training. (4 Flights, 6.0 Hours).

TAC-371 1.5 O 2+ ACFT A

Goal. Conduct an assault support mission in a low threat scenario using MCCRES standards as a reference for mission planning.

Requirement

Discuss:
Cabin preparations.
Passenger brief and safety regulations.
Ramp and hatch operation.
Loading/unloading of passengers and/or internal/external cargo.
Gear storage.
Helicopter Emergency Egress Lighting System (HEELS).
Helicopter Emergency Flotation System (HEFS), exit blocking when deployed.
CRM.
ICS procedures.
Lookout doctrine.
Penetration checklist.

Introduce:
Aircrew responsibilities during tactical insert/extract of troops and/or cargo.
Tactical formations and approaches as contained in NWP 3-22.5-CH-46E.

Review:
A1-H46AE-CLG-000 Cargo Loading Manual.

Performance Standards. Demonstrate the ability to perform crew responsibilities in a day low threat environment.

Prerequisite. CAL-212, TERF qualified, and AG qualified.

Ordnance. 500 rounds .50 cal.

Range requirements. Appropriate aerial gunnery range equipped with multiple scored static/moving targets ranging from personnel to APC size.

External Syllabus Support. Authorized TERF area, CAL site, (live fire range preferred).

TAC-372 1.5 O 2+ ACFT A NS

Goal. Conduct an NS assault support mission in a low threat environment using MCCRES standards as a reference for mission planning.

Requirement

Discuss:
- Use of onboard ASE during the mission.
- CRM during the ingress, objective area, and egress phases of the mission.
- Rules of engagement as applicable to the mission.
- Tactics used in a low threat environment.

Introduce:
- Aircrew responsibilities during NS tactical insert/extract of troops and/or cargo.

Performance Standards. Demonstrate ability to perform crew responsibilities during NS operations in a low threat environment.

Prerequisite. TAC-371.

Ordnance. 500 rounds .50 cal.

Range requirements. Appropriate Laser authorized aerial gunnery range equipped with multiple scored static/moving targets ranging from personnel to APC size.

External Syllabus Support. Authorized TERF area, CAL site (live fire range preferred).

TAC-374 1.5 O 2+ ACFT A

Goal. Conduct a day assault support mission in a medium threat environment emphasizing MCCRES standards.

Requirement

Discuss:
- CRM during an assault support mission.
- Crew comfort level.
- Flight counter-tactics for air and ground threats.
- ASE utilization.
- Escort considerations.
- Control and terminology for onboard defensive weapons.
- NBC considerations.
- TERF considerations.
- Aerial gunnery procedures.
- EMCON procedures.

Introduce:
Multi-plane aerial gunnery in an objective area/LZ.

Review:
Navigation, timing, formation, defensive weaponry, communication discipline, authentication procedures, escort utilization, and weapons control procedures.

Performance Standards. Demonstrate the ability to perform crew responsibilities during day operations in a medium threat environment.

Prerequisite. TAC-371.

Ordnance. 500 rounds .50 cal.

Range requirements. Appropriate aerial gunnery range equipped with multiple scored static/moving targets ranging from personnel to APC size.

External Syllabus Support. TERF area, CAL site, (live fire, EW range preferred).

TAC-375 1.5 R,O 2+ ACFT A NS

Goal. Conduct a NS assault support mission in a medium threat environment emphasizing MCCRES standards.

Requirement

Discuss:
CRM during an assault support mission.
Crew comfort level.
Flight counter-tactics for air and ground threats.
ASE utilization.
Escort considerations.
Control and terminology for onboard defensive weapons.
NBC considerations.
TERF considerations.
Aerial gunnery procedures.

Introduce:
Tactical assault support mission at night using NS.
Escort aircraft utilization if available.
Multi-aircraft NS aerial gunnery in an objective area.

Review:
TAC-374. Emphasize navigation, timing, formation, communication discipline, authentication procedures, escort utilization and weapons control procedures.

Performance Standards. Demonstrate the ability to perform crew responsibilities during NS operations in a medium threat environment.

Prerequisite. TAC-372.

Ordnance. 500 rounds .50 cal.

Range requirements. Appropriate Laser authorized aerial gunnery range equipped with multiple scored static/moving targets ranging from personnel to APC size.

External Syllabus Support. TERF area, CAL site (live fire, EW range preferred).

8. External Cargo Operations (EXT)

a. Purpose. To conduct NS external cargo operations.

b. General. At the completion of this stage the CCUI/AGOUI will be able to conduct NS external operations. EXT-392 requires an ENSI for initial/refresher flight.

c. Crew Requirement CC/AGO, ENSI/CCUI or ENSI/CC/AGOUI.

d. Ground/Academic Training

(1) Read appropriate chapters of the NATOPS Manual.

(2) Read appropriate paragraphs of the Air NTTP 3-22 publications and T/M/S NATOPS.

(3) Read appropriate paragraphs of MCRP 4-11.3E Volumes I and II, Basic Operations and Equipment and Single Point Rigging Procedures.

e. Flight Training. (1 Flight, 1.5 Hours).

EXT-392 1.5 R,O 1 CH-46E A NS

Goal. Introduce and conduct NS External operations.

Requirement

Discuss:
CRM.
Crew comfort levels.
Lost communications.
Low altitude emergencies.
Cargo release procedures.
Cargo hook/pendant illumination.
Depth perception/rate of descent.
HST procedures.
NS procedures/emergencies.
Waveoff.

Introduce:
NS external operations.

Review:
Drift corrections, common terminology, ground relationship, lookout procedures during takeoffs, precision approaches, and deliveries with external cargo while wearing NS.

Performance Standards. While utilizing NS, demonstrate the ability to give commands to the pilot at the controls of the aircraft to effect hookup and delivery the load within 5 meters of intended point of delivery with minimal difficulty

utilizing standard terminology while maintaining obstacle clearance.

Prerequisite. EXT-221 and NS-251. ENSI required if CCUI is not NSQ for appropriate light level.

External Syllabus Support. Single point load (1,000-4,000 pounds preferred), HST, authorized TERF route.

234. CORE PLUS PHASE

1. Tactics (TAC) (High Threat Environment)

a. Purpose. To develop proficiency in tactical execution of assault support operations in the following mission areas in a high threat environment. Use MCCRES Volume III, Section A, Standards:

(1) Helicopter Assault Operation [MPS 3A.4].

(2) Noncombatant Evacuation Operation (NEO) [MPS 3A.7].

(3) Raid [MPS 3A.8].

(4) Security/Reinforcement [MPS 3A.9].

(5) Reconnaissance Patrol/Reaction Force Operation [3A.10].

(6) Medical Evacuation {MPS 3A.1].

(7) Tactical Recovery of Aircraft, Equipment, and Personnel (TRAP) [MPS 3A.12].

b. General

(1) CCUI shall attend the mission brief.

(2) Every attempt should be made to expend the required .50 cal rounds. However, this should not restrict the completion of the event. Squadron ordnance shall mount .50 caliber machine guns for all tactical flights.

(3) CCUI/AGOUI shall be AG qualified prior to beginning this stage.

(4) CCUI/AGOUI shall be NSQ for the light level being flown.

(5) Aircrews shall discuss CRM as applicable to each event.

c. Crew Requirement. CC/AG, CC/CCUI or CC/AOUI.

d. Ground/Academic Training. Appropriate lectures in the MAWTS-1 Crew Chief ASP.

e. Flight Training. (2 Flights, 3.0 Hours).

TAC-401 1.5 O 2+ ACFT A

Goal. Conduct a day assault support mission in a high threat environment using MCCRES standards. Incorporate AG and EW concepts and skills.

Requirement

Discuss:
CRM/crew comfort level.
ASE operations and secure voice capability.
NBC considerations.
Aerial gunnery procedures.

Introduce:
Secure voice and ASE equipment.
Navigation, timing, formation, defensive weaponry, communication discipline, authentication procedures, escort utilization, and weapons control procedures.

Review:
TAC-374.

Performance Standards. Demonstrate knowledge and ability to perform crew responsibilities in a high threat environment.

Prerequisite. TAC-374 and GTR-332.

Ordnance. 500 rounds .50 cal.

Range requirements. Appropriate aerial gunnery range equipped with multiple scored static/moving targets ranging from personnel to APC size.

External Syllabus Support. As available: live fire (HE preferred), Laser capable, FW/RW Escort/CAS assets, EW Emitter, FW/RW Adversaries, Smokey SAMs.

TAC-402 1.5 R,O 2+ ACFT A NS

Goal. Conduct an NS assault support mission in a high threat environment using MCCRES standards.

Discuss:
In addition to the TAC-401 discussion items, discuss NS LLL operational considerations.
Execute a NS LLL mission similar to TAC-401. Mission will be flown at TERF altitudes.
Emphasis on lookout doctrine, navigation, timing, formation, communication discipline, authentication procedures, escort utilization, and weapons control procedures.

Introduce:
NS high threat tactics.

Review:
TAC-401.

Performance Standards. Demonstrate knowledge and ability to perform crew responsibilities during NS operations in a high threat environment.

Prerequisite. TAC-401 and TAC-375.

Ordnance. 500 rounds .50 cal.

Range Requirements. Appropriate Laser authorized aerial gunnery range equipped with multiple scored static/moving targets ranging from personnel to APC size.

External Syllabus Support. As available: live fire (HE preferred), Laser capable, FW/RW Escort/CAS assets, EW Emitter, FW/RW Adversaries and Smokey SAMs.

2. Confined Area Landings (CAL)

a. Purpose. To develop crew coordination during unaided confined area operations.

b. General. At the completion of this stage, the CC/AOUI will be able to demonstrate the ability to assist the pilots during unaided CALS.

c. Crew Requirement. CC/AGO, CC/CCUI or CC/AOUI.

d. Ground/Academic Training. None.

e. Flight Training. (1 Flight, 1.5 Hours).

CAL-413 1.5 O 1 CH-46E A N*

Goal. Review night unaided CALs.

Requirement

Discuss:
CRM.
Obstacle clearance.
Common terminology.
Distance estimation.
Waveoff/brownout procedures.

Review:
Lookout doctrine.
ICS procedures.
Aircraft clearance and terrain suitability.
Night operations.
Aircraft lighting and light discipline.

Performance Standards. Demonstrate aircrew responsibilities during night unaided CALs.

Prerequisite. CAL-211.

External Syllabus Support. CAL zone.

2. External Cargo Operations (EXT)

a. Purpose. To conduct TERF external cargo operations.

b. General. At the completion of this stage the CCUI/AGOUI will be able to conduct TERF external operations. EXT-420 requires an ETERFI for initial/refresher flight.

c. Crew Requirement. EXT-420 CC/AGO, ETERFI/CCUI or ETERFI/AGOUI.

d. Ground/Academic Training: Utilize academic courseware as outlined in the MAWTS-1 Course Catalog.

e. Flight Training. (1 Flights, 1.5 Hours).

EXT-420 1.5 O 1 CH-46E A

Goal. Introduce and conduct external operations in the TERF environment.

Requirement

Discuss:
CRM.
External cargo hook operations/preparation.
Communication procedures.
Cargo jettison procedures.
Emergencies with external cargo.
Waveoff procedures.
ICS procedures.
HST requirements.

Introduce:
External operations in a TERF environment.

Review:
TERF-242.
Cargo Loading Manual, A1-H46AE-CLG-000.

Performance Standards. While in the TERF environment, demonstrate the ability to give commands to the pilot at the controls of the aircraft to effect hookup and delivery the load within 5 meters of intended point of delivery with minimal difficulty utilizing standard terminology while maintaining obstacle clearance.

Prerequisite. EXT-221 and TERF-242.

External Syllabus Support. Load (1,000-4,000 pounds preferred), HST, authorized TERF route.

3. Nuclear, Biological, and Chemical (NBC)

a. Purpose. To develop proficiency with the AR-5 protective assembly during normal and tactical flight operations.

b. General

(1) For the safe execution of initial NBC flights, 1 pilot and 1 aircrewman shall remain unmasked. On subsequent flights, all aircrew may remain masked.

(2) Initial NBC-431 training flight will be flown in HLL conditions. Proficiency flights may be flown in LLL.

(3) Aircrew shall be NSQ HLL.

(4) ENSI required for all initial NS instructional flights.

(5) If flown during LLL conditions, aircrew shall be NSQ.

c. Crew Requirement. CC/AO, CC/CCUI or CC/AOUI.

d. Ground/Academic Training

(1) Discuss and review NBC information contained in NWP 3-22.5-CH-46E.

(2) Discuss AR-5 hookup and operating procedures in the aircraft.

(3) Egress drills with full NBC protective equipment simulating both overland and overwater emergencies shall be completed prior to NBC instructional flights.

e. Flight Training. (2 Flights, 2.0 Hours).

NBC-431 1.0 R 1 CH-46E A

Goal. Conduct normal flight operations in a simulated NBC environment.

Requirement

Discuss:
Aircrew protective ensemble.
Nuclear effects to aircraft and aircrew.
Chemical and Biological agents, their effects and aircrew protective measures.
Decontamination considerations.
CRM in a NBC environment, to include emergency procedures.
Operation, capabilities and limitations of protective masks.
Physiological limitations and fatigue factors imposed by NBC protective equipment.
Heliborne operations in a NBC environment.

Introduce:
With NAVAIR approved NBC mask donned:
Start/taxi while masked.
Takeoff/landing while masked.
Straight & level flight while masked.
Hovering while masked.
CALs while masked.

Review:
Donning, adjustments, and doffing of the NAVAIR approved NBC mask.

Performance Standards. Demonstrate the ability to perform crew responsibilities in a NBC environment.

Prerequisite. CAL-211.

External Syllabus Support. CAL site.

NBC-432 1.0 1 CH-46E A NS

Goal. Conduct NS flight operations in a simulated NBC environment.

Requirement

Discuss:
CRM.

Limitations of mask pertaining to flight scan and visual acuity.
Limitations and fatigue factors imposed by NBC protective equipment.
Proper mask maintenance and factors which render the mask unserviceable.
Limitations of NS caused by mask affecting scan and visual acuity.
Limitations and fatigue factors imposed by NBC protective equipment and NS.

Introduce:
With NAVAIR approved NBC mask and NS donned:
Start/taxi while masked and wearing NS.
Takeoff/landings while masked and wearing NS.
Straight & level flight while masked and wearing NS.
Hovering while masked and wearing NS.
CALs while masked and wearing NS.

Review:
Proper use of the NAVAIR approved NBC mask (donning and removing on the ground and in the air).

Performance Standards. Demonstrate knowledge and ability to perform NS NBC operations.

Prerequisite. NS-257 and NBC-431.

External Syllabus Support. CAL site.

4. Defensive Measures (DM)

a. Purpose. To develop proficiency in tactics and aerial DM used to evade enemy air-to-air threats.

b. General

(1) After successful completion of DM-441/442 the CCUI/AGOUI is DM qualified. A qualification letter signed by the commanding officer stating the aircrew is DMQ is required to be placed in the aircrew APR and NATOPS jacket with appropriate logbook entry.

(2) Aircrews shall not conduct DM training unless the following requirements are met:

(a) A proficient EDMI is present in the aircraft for all initial flights.

(b) The flight lead must be DM qualified and specifically brief all applicable DM training rules per the Air NTTP 3-22 publications.

(c) The flight lead briefs any aggressor aircrew per T&R Program Manual, and covers training rules prior to each flight.

(d) EDMI shall not have lookout responsibility during DM training.

(3) For helicopter versus helicopter DM, the aggressor aircraft shall be a non-assault helicopter.

(4) .50 caliber machine guns shall be mounted for all DM flights.

(5) Prerequisites:

(a) TERF qualified.

(b) FORM-231.

c. Crew Requirement. CC/AGO, EDMI/CCUI/AGO, EDMI/CC/AGOUI, EDMI/CCUI/CCUI or EDMI/AGOUI/AGOUI.

d. Ground/Academic Training. Utilize academic courseware as outlined in the MAWTS-1 Course Catalog.

e. Flight Event Training (2 Flights, 3.0 Hours)

DM-441 1.5 R 2 CH-46E A VS 1 RW AGGRESSOR

Goal. Introduce DM against a RW aggressor.

Requirement

Discuss:
CRM/Inter-flight coordination.
Crew comfort level.
Lookout doctrine.
Common terminology.
Situational Awareness.
DM training rules.
Closure rate, radius of turn, and energy state.
RW weapons parameters and considerations.
Use of ALE-39/47, APR-39, ALQ-157, and AAR-47.
Use of onboard weapons.
DM against RW aggressor.
Inter/intra aircraft communication.

Introduce:
Helicopter versus helicopter DM with an aggressor helicopter per the MAWTS-1 Helicopter DM Guide.

Review:
Helicopter performance characteristics and NATOPS limitations.

Performance Standards. Aircrew shall meet learning objectives as established by Air NTTP 3-22 publications, demonstrate effective maneuvering in response to threat, maintain SA of wingman prior to and through evasive maneuvering, proper ASE employment WRT threat, execute per DM training rules and NATOPS limits, demonstrate effective threat evaluation, appropriate threat response, effective inter and intra aircraft communication, understanding of mutual supportability, recognize closure rate, , maintain energy state, utilize proper terminology, utilize effective 360 degree lookout doctrine, demonstrate proper threat calls, proper utilization of onboard defensive systems, understanding

of threat weapons capabilities and appropriate flight response.

Prerequisite. Stage Prerequisites, GTR-332.

Ordnance. 20 chaff and 40 flares.

External Syllabus Support. Range (TACTS optional), RW adversary (RW platform capable of fwd firing ordnance).

DM-442 1.5 R 2 CH-46E A VS 1 FW AGGRESSOR

Goal. Introduce DM against a FW aggressor.

Requirement

Discuss:
- CRM/inter flight coordination.
- Crew comfort level.
- Lookout doctrine.
- Common terminology.
- Situational awareness.
- DM training rules.
- Closure rate, radius of turn, and energy state.
- FW weapons parameters and considerations.
- Use of ALE-39/47, APR-39, ALQ-157, and AAR-47.
- Use of onboard weapons.
- DM against FW aggressor.
- Inter/intra aircraft communication.

Introduce:
- Helicopter versus FW DM per the MAWTS-1 Helicopter DM Guide.

Performance Standards. Aircrew shall meet learning objectives as established by Air NTTP 3-22 publications, demonstrate effective maneuvering in response to threat, maintain SA of wingman prior to and through evasive maneuvering, proper ASE employment WRT threat, execute per DM training rules and NATOPS limits, demonstrate effective threat evaluation, appropriate threat response, effective inter and intra aircraft communication, understanding of mutual supportability, recognize closure rate, , maintain energy state, utilize proper terminology, utilize effective 360 degree lookout doctrine, demonstrate proper threat calls, proper utilization of onboard defensive systems, understanding of threat weapons capabilities and appropriate flight response.

Prerequisite. Stage Prerequisites, GTR-332.

Ordnance. 20 chaff and 40 flares.

External Syllabus Support. Special use airspace preferred.

5. Mountain Area Training (MAT)

a. Purpose. To develop proficiency in mountainous terrain operations.

b. General. All aircrew shall be NSQ for the appropriate light level being flown.

c. Crew Requirement. MAT-450 requires CC or CC/CCUI. MAT-451 requires CC/AO, CC/CCUI or CCAOUI.

d. Academic Training. Refer to appropriate chapters in the NATOPS Manual for discussion of mountain landing zone characteristics.

e. Flight Training. (2 Flights, 3.0 Hours).

MAT-450 1.5 R,O 2 CH-46E A

Goal. Introduce section aircraft operations in mountainous terrain.

Requirement

Discuss:
- CRM.
- Crew comfort levels.
- Communication/standard terminology.
- Multi-aircraft operations.
- Lookout doctrine.
- Landing site evaluation/terrain suitability.
- Effects of high altitude on aircraft performance.
- Emergency procedures.

Introduce:
- Section operations in mountainous terrain.
- Section CALs in mountainous terrain.

Review:
- CAL-212 and MAT-351.

Performance Standards. Demonstrate the ability to conduct section landings in mountainous terrain.

Prerequisite. CAL-212 and MAT-351.

External Syllabus Support. Range that supports MAT.

MAT-451 1.5 R, O 1 CH-46E A NS

Goal. Introduce NS mountainous area operations.

Requirement

Discuss:
- CRM.
- Crew comfort levels.
- Communication/common terminology.
- Landing site evaluation/terrain suitability.
- Emergencies (aircraft and NS).
- NS failures.
- NS navigation techniques.

Introduce:
- NS mountainous terrain operations.
- NS CALs in mountainous areas.

Review:
NS-251.

Performance Standards. Demonstrate ability to conduct NS MAT.

Prerequisite. NS-251 and MAT-351.

External Syllabus Support. Range that supports MAT.

6. Helicopter Insertion/Extraction (HIE)

a. Purpose. To develop proficiency in HIE procedures.

b. General

(1) Pilot, copilot, crew chief, HRST Master, and HRST Safety Observer shall brief together prior to commencing fastrope, rappelling, and SPIE.

(2) The Jump Master is responsible for the safe and proper rigging of the aircraft for conduct of paraops and cargo drops. The crew chief shall preflight aircraft rigging.

(3) ICS cranials and gunner's belts are required for all HIE events.

(4) CCUI/AGOUI shall be NSQ for the light level being flown.

(5) An ENSI is required for initial/refresher NS flights.

c. Crew Requirement

(1) HIE-460, 462, and 463 require CC or CC/CCUI.

(2) HIE-461 requires CC/AO, ENSI/CCUI or ENSI/AGOUI if flown on NS.

d. Ground/Academic Training

(1) Review Air NTTP 3-22 publications and applicable Force Orders/SOPs.

(2) Review NWP 19-1 series for rescue prccedures and MCO 3130 series for Category B SAR Unit procedures.

(3) Applicable courses from the MAWTS-1 Course Catalog.

e. Flight Training. (4 Flights, 4.0 Hours).

HIE-460 1.0 R, O 1 CH-46E A (NS)

Goal. Introduce SPIE rig operations.

Requirement

Discuss:
HIGE/HOGE requirements.
CRM (pilots, crew chief, HRST Master, and HRST Safety Observer brief together).
ICS procedures and standard terminology.
ICS failure/hand and arm signals.
Current Force Order/Wing SOP.
Emergency procedures.

Obstacle clearance/waveoff.
Lookout doctrine.
SPIE from water.

Introduce:
Inspection of the SPIE rig.
Tactical troop insert/extract via SPIE.
Review:
SPIE rig procedures.

Performance Standards. Demonstrate ability and knowledge to conduct day SPIE operations.

Prerequisite. EXT-221.

External Syllabus Support. Applicable HIE support equipment, HRST and Safety Observers.

HIE-461 1.0 R, O 1 CH-46E A (NS)

Goal. Introduce day or NS aerial delivery procedures.

Requirement

Discuss:
CRM (pilot, copilot, crew chief, and Jump Master/Cast Master brief together).
Voice communication/standard terminology during aerial deliveries.
Tactical considerations for aerial delivery of troops/cargo.
Proper rigging and preflight of equipment to be inserted by aerial delivery.
Paraop procedures.
Sensor drop procedures.
ICS procedures.
Emergency procedures.
Movement within aircraft cabin.

Introduce:
Paraop or sensor drop operations.

Review:
Paraop or sensor drop procedures.

Performance Standards. Demonstrate the ability to conduct aerial delivery.

External Syllabus Support. Certified DZ, Jumpmaster and Safety Observers.

HIE-462 1.0 R, O 1 CH-46E A (NS)

Goal. Introduce helocast/soft duck procedures.

Requirement

Discuss:
CRM.
Crew comfort levels.

Waterfall effect.
Salt encrustation.
Ditching procedures.
Helicopter Emergency Flotation System (HEFS).
Ditching/water landing.

Introduce:
Helocasting/soft duck procedures.
Preflight of aircraft, troops and equipment for helo cast or soft duck.

Review:
Overwater emergency procedures.
Helocasting/soft duck progress.

Performance Standards. Demonstrate ability to conduct helocast/soft duck operations.

External Syllabus Support. Castmaster and Safety Observers.

HIE-463 1.0 R, O 1 CH-46E A (NS)

Goal. Introduce hoist and rescue procedures.

Requirement

Discuss:
CRM.
Crew comfort levels.
Waterfall effect.
Salt encrustation.
Ditching procedures.
HEFS.
SAR equipment.
Emergency procedures.
Cable entanglements.

Introduce:
Rescue procedures.
Internal winch/external hoist rigging.
Hoist procedures for hatch and hell hole.
Use of rescue strop, jungle penetrator, and stokes litter.
Emergency procedures including use of Chicago grip, quick splice, and cable cutters.

Review:
Overwater emergency procedures.
SAR procedures and facilities.

Performance Standards. Demonstrate knowledge and ability to conduct hoisting operations.

Prerequisite. EXT-221.

External Syllabus Support. Operational jungle penetrator or SAR basket (as available).

7. Aircraft Procedures Familiarization

a. Purpose. To familiarize the crew chief with cockpit emergency procedures, switches and CNCS operation.

b. General

(1) Refer to NATOPS for emergency procedures and CNCS operation.

(2) Pilots may sign off the initial crew chief ATF on this code only.

c. Crew Requirement. HAC/crew chief.

d. Ground/Academic Training. Review appropriate chapters of the NATOPS.

e. Simulator training. (1 event, 1.5 Hours).

SFAM-470 1.5 R, O WST S

Goal. To better assist the pilots during aircraft emergency and multi-task situations.

Requirement

Discuss:
CNCS operation and programming procedures.
Pilot emergency procedures.
Cockpit procedures.
Aircraft systems procedures.
Aircraft flight characteristics.

Introduce:
Pilot emergency procedures.
CNCS operation and procedures.

Review:
Pilot emergency procedures and ASE.

Performance Standards. The crew chief shall demonstrate the ability to assist pilots during emergency procedures, CNCS operation and ASE operation.

External Syllabus Support. WST/AST.

8. Tail Gunnery (TG)

a. Purpose. To conduct aerial gunnery training utilizing the M240 7.62mm machine gun from the ramp.

b. General

(1) Individuals successfully completing TG-481 and TG-482 may be issued a TG Qualification letter from the commanding officer.

(2) Unqualified individuals [Tail Gunners Under Instruction (TGUI)] shall be supervised by a TGI.

(3) Individuals shall be NSQ for the appropriate light level condition. AG Qualification is a prerequisite for TG-481.

(4) Laser aiming devices are required for TG-482.

(5) Tail gunnery introductory lectures and initial instructional flights shall be conducted by a TGI.

(6) Completion of the entire AG course cannot be waived or deferred.

c. Crew Requirement. TG-481 CC/TG or CC/TGUI/TG; TG-482 CC/AGO/TG or CC/AGO/TGUI/TGI.

d. Ground/Academic Training. Utilize the academic courseware as outlined in the MAWTS-1 Course Catalog.

e. Flight Training. (2 Flights, 3.0 Hours).

TG-481 1.5 R 1 CH-46E A

Goal. Introduce/practice tail gunnery utilizing the M240 7.62mm machine gun from the ramp to provide rear defensive fires.

Requirement

Discuss:
- CRM.
- ICS procedures.
- Safety.
- Weapons conditions.
- Weapons commands.
- Weapons malfunctions/stoppages/emergencies.
- Crew served weapons checklist application.
- Muzzle awareness.
- Weapons preparation/nomenclature.
- Emergency egress procedures.
- Section tactics.

Introduce/practice:
- Tail gunnery employment techniques.
- Firing on pre-briefed targets from the ramp.

Review: All previous aerial gunnery work.

Performance Standards. Demonstrate knowledge of the cycle of operation, nomenclature, employment of the M240 7.62mm machine gun while fired from the ramp. Demonstrate the ability to engage pre-briefed targets.

Prerequisites. AG qualification (AGQ).

Ordnance. 500 rounds 7.62mm.

External Syllabus Support. Authorized aerial gunnery range.

TG-482 1.5 R 1 CH-46E A NS

Goal. Introduce/practice NS tail gunnery utilizing the M240 7.62mm machine gun from the ramp to provide rear defensive fires.

Requirement

Discuss:
CRM.
ICS procedures.
Safety.
Weapons conditions.
Weapons commands.
Weapons malfunctions/stoppages/emergencies.
Crew served weapons checklist application.
Muzzle awareness.
Weapons preparation/nomenclature.
Emergency egress procedures.
Laser aiming devices/procedures.
NS operations and emergency procedures.
Section tactics.

Introduce/practice:
NS tail gunnery weapons employment techniques.
Firing on pre-briefed targets from the ramp.

Review:
Previous aerial gunnery syllabus.

Performance Standards. Demonstrate knowledge of the cycle of operation, nomenclature, employment of the M240 7.62mm machine gun while fired from the ramp. Demonstrate the ability to engage pre-briefed targets while utilizing NS and laser aiming devices.

Prerequisites. TG-481.

Ordnance. 500 rounds 7.62mm, laser aiming device.

External Syllabus Support. LASER authorized aerial gunnery range.

9. Carrier Qualification (CQ)

a. Purpose. To introduce/refresh the CC/AGO in unaided shipboard landings.

b. General

(1) Refer to LHA/LPH/LHD NATOPS Manuals and NWP-42 for air capable ship operations.

(2) Night CQ Requirements

(a) Requirements for initial/Refresher/delinquent qualification are:

1 Five day CQs.

2 Five night unaided CQs.

(b) CC/AGOs CQ-491 proficient per paragraph (2) (a) above shall complete the following to maintain proficiency:

1 Two day CQs.

2 Two night unaided CQs.

(3) CQ-301 shall be flown under HLL conditions for initial qualification. ENSI required for initial NS flights. Currency and re-qualification flights may be flown under any light level condition.

(4) CC/AGO is CQ on completion of CQ-300, CQ-301.

(5) CC/AGO is authorized to carry passengers during daylight hours when proficient in CQ-300.

(6) CC/AGO is authorized to carry passengers under all conditions when proficient in CQ-301 and CQ-491 IAW MCO P3500.14.

(7) CC/AGO shall discuss CRM as applicable to each event.

c. Crew requirements. CC, CC/CCUI.

d. Ground/Academic Training. Review appropriate chapters of NWP-42 and the LPH/LHA/LHD NATOPS Manual.

e. Flight Training. (2 Flights, 2.0 Hours).

CQ-490 1.0 O 1 CH-46E A N*

Goal. Conduct night unaided FCLPs.

Requirement

Discuss
CRM.
Communications.
LSE signals.
NS procedures/operations.
Aircraft lighting.
Shipboard lighting.
Wave off.
Crew comfort levels.
Lookout Doctrine.

Introduce:
Night unaided FCLP patterns, approaches, landings, and emergency procedures peculiar to shipboard operations.

Review:
CQ-291.

Performance Standards. Demonstrate the ability/knowledge to perform unaided shipboard flight operations to include LSE hand and arm signals.

Prerequisite. CQ-291.

External Syllabus Support. Approved FCLP pad.

CQ-491 1.0 R,O 1 CH-46E A N*

Goal. Conduct night unaided CQs.

Requirement

Discuss:
CRM during shipboard landings.
Communications used during shipboard landings.
LSE signals.
Water landings/ditching.
Aircraft lighting used during shipboard landings.
Rotor engagement/disengagement.
Launch/recovery wind envelopes.
LSE signals.

Introduce:
Unaided CQ operations.

Review:
CQ-291 and CQ-300.

Performance Standards Demonstrate the ability/knowledge to perform unaided shipboard flight operations to include LSE hand and arm signals.

Prerequisite. CQ-490 and CQ-300.

External Syllabus Support. CQ capable ship.

240. INSTRUCTOR TRAINING

1. Crew Chief Instructor Under Training (CCIUT)

a. Purpose. To standardize procedures for qualifying syllabus instructors within the Marine Enlisted Aircrew Training Department (MEAT).

b. General

(1) The CCIUT must demonstrate proficiency in instructing all evolutions in this stage.

(2) CCIUT events 500 through 511 shall be complete prior to being designated a Marine Enlisted Aircrew Training Instructor (MEAT Instructor).

(3) Upon completion of the STANX-511 and designation by the commanding officer, the MEAT Instructor is capable of instructing all Core Skill Introduction phase events to include TERF and NS events.

(4) The CC IUT shall have completed the requirements for designation as Night Systems FAM Instructor (NSFI) and TERFI per MAWTS-1 Course Catalog.

(5) Prerequisite: TERF/NSQ.

c. Crew Requirements. CCI/CCIUT.

d. Ground/Academic Training. CCIUT will complete the MEAT ground training syllabus and the Basic Instructor course prior to flying or teaching any syllabus events.

e. Flight Training. (9 Flights, 15 hours).

FAM-500 1.5 E 1 CH-46E A

Goal. Demonstrate crew chief responsibilities and instructional techniques during familiarization flight.

Requirement

Demonstrate instructional techniques of crew chief responsibilities during a Familiarization flight.

Discuss:
- CRM.
- Course Rules

Performance Standards. The CCIUT will conform to instructional techniques set forth by the MEAT for all FAM maneuvers per the FRS Standardization Manual and NATOPS Manual.

Prerequisites. Appropriate FRS lesson.

FAM-501 1.5 E 1 CH-46E A N*

Goal. Introduce night operations.

Requirement

Discuss:
- Lighting systems.
- Night operations.
- Estimating distances.
- CRM.
  - Adaptability/flexibility.
  - Decision making.

Introduce:
- Daily at night.
- Turnaround at night.
- Light discipline.
- Aircraft lighting.
- Airfield lighting.
- Night lookout doctrine.

Review:
- Night precautionary Landings.
- Night emergency landings.
- Overview of duties.
- SA.
- Night startup/shutdown procedures.
- Limitations.
- Hot seat procedures.

Performance Standards. Demonstrate CCI responsibilities and instructional techniques during night unaided operations IAW NATOPS.

Prerequisite. FAM-500.

NAV-502 1.5 E 1 CH-46E (N)

Goal. Demonstrate crew chief responsibilities and Navigational instructional techniques.

Requirement

Discuss:
- Navigation and identifying positions using charts and maps.

Review:
- CRM.
- Lost plane procedures.
- Time/distance checks.
- Distance information and map legend information.
- Techniques of instruction.

Performance Standards. Demonstrate proper CCI techniques and responsibilities for all NAV Procedures per the FRS Standardization Manual and NATOPS Manual.

Prerequisite. Appropriate FRS lesson.

CAL-503 1.5 E 1 CH-46E A

Goal. Demonstrate CCI responsibilities and instructional techniques during confined area landings (CALs).

Requirement

Discuss:
- Limitations for slope landings.
- Clearance in confined area landings.
- Wave off.
- CRM.
  - Situational Awareness.
  - Assertiveness.
- Emergency procedures.

Review:
- Standard terminology.
- Engine failures in flight.

Performance Standards. Demonstrate proper CCI techniques andresponsibilities during confined area landing maneuvers per the FRS Standardization Manual and Natops Manual.

Prerequisite. Appropriate FRS lesson.

FORM-504 1.5 E 1 CH-46E A

Goal. Demonstrate CCI responsibilities and instructional techniques used during formation flight operations.

Requirement

Discuss:
- Lookout doctrine.
- Section CALs
- Formation maneuvers.

Review:
- Standard terminology.
- CALs.
- CRM.
- Emergencies Procedures.

Performance Standards. Demonstrate proper CCI techniques and responsibilities used during formation flight operations per the FRS Standardization Manual and NATOPS Manual.

Prerequisite. Appropriate FRS lesson.

TERF-505 1.5 E 1 CH-46E A

Goal. Demonstrate CCI responsibilities and instructional techniques during terrain flight maneuvers(TERF).

Requirement

Discuss:
- Obstacle clearance.
- Standard terminology.
- Crew comfort levels.
- Wave off.
- Clearance in confined areas.
- Emergencies during low level operations.
- CRM.
  - Assertiveness.
  - Communication.

Introduce:
- Blade walk.
- Hover check theory.
- TERF maneuvers.
  - Bunts.
  - Rolls.
  - Masking and unmasking.
  - Spiral approach.
  - Low level quick stop.
  - Zoom climb.

Review:
- Crew responsibilities.
- Clearance calls.

Performance Standards. Demonstrate a basic understanding of TERF maneuvers.

Prerequisite. ACAD-022,FAM-116.

External Syllabus Support. Low level TERF area in controlled airspace.

EXT-506 1.5 E 1 CH-46E A

Goal. Demonstrate crew chief responsibilities and instructional techniques during external cargo procedures.

Requirement

Discuss:
- Static discharge precautions.
- Lost communications.
- Hand signals.
- Emergency release procedures.
- Inspection of cargo hook and pendant.

Review:
- External operations.
- Cargo hook procedures.
- Techniques of instruction

Performance Standards. CCI will conform to instructional techniques set forth by the FRS for all EXT Procedures per the FRS Standardization Manual and Natops Manual.

Prerequisite. Appropriate FRS lesson.

External Syllabus Support. HST, external load, pendant and hook.

NS-507 1.5 E 1 CH-46E A NS

Goal. Demonstrate CCI responsibilities and instructional techniques used during night vision device operations.

Requirement

Discuss:
- Crew comfort levels.
- NS failures.
- Depth perception.
- Aircraft lighting.
- Emergency procedures.
- CRM.
  - Mission analysis.
  - Assertiveness.

Introduce:
- Use of NS during low level operations.
- Aircraft configuration.
- Taxiing on NS.
- Use of NS at an unlit field.

Ground relationships.

Review:
Communication.
Lookout doctrine.
Night startup/shutdown.
Aircraft lighting.
Taxiing signals.
Light discipline.
Crew duties.
Vertigo.

Performance Standards. Apply basic NS skills as outlined in the MAWTS-1 NVD manual.

Prerequisite. Completion of NITE Lab and FAM-505.

IUT-511 3.0 1 CH-46E (N)

Goal. CC standardization check.

Requirement

Discuss:
CCUI duties/responsibilities.
Standard terminology.
External operations.
CALs.
CRM.
Emergency procedures.
Instructional techniques.

Review:
Applicable 100 series codes.

Performance Standards. Demonstrate standard CCI procedures, techniques and responsibilities per the FRS Standardization Manual and NATOPS Manual.

Prerequisite. FAM-500, FAM-501, NAV-502, CAL-503, FORM-504, TERF-505, EXT-506, NS-507.

External Syllabus Support. As required.

250. REQUIREMENTS, QUALIFICATIONS, AND DESIGNATIONS

1. NATOPS Training/Evaluation

a. Purpose. To complete the annual NATOPS requirement.

b. General

(1) This is an annual flight requirement as listed in OPNAVINST 3710.7 and A1-H46AE-NFM-000 (CH-46 NATOPS Manual).

(2) This flight code will not provide a CRP value and will be used primarily to assist in management and tracking annual NATOPS evaluations.

(3) The evaluating crew chief shall be a designated NATOPS Evaluator/Assistant NATOPS instructor.

c. Crew Requirements. CC/CC or CC/AGO.

d. Ground/Academic Training. None.

e. Flight Training. (1 Flight, 1.5 Hours).

RQD-600 1.5 R,O E 1 CH-46E A (N)

Goal. CC/AGO annual NATOPS evaluation.

Requirement. Evaluate proficiency using all aspects of the CH-46E as a weapons system. The proficiency expected by the evaluator in this flight shall be commensurate with the experience of the CC or AGO being evaluated.

Discuss:
All emergency procedures and Standardization Manual maneuvers.

Performance Standards. The performance expected by the evaluator in this flight shall be commensurate with the experience of the aircrew under evaluation.

Prerequisite. Completion of the open and closed book NATOPS examinations.

251. GRADUATE LEVEL COURSES

1. There are seven graduate level courses that qualify crew chief instructors for specific portions of the T&R syllabus. These courses are as follows:

a. Enlisted Weapons and Tactics Instructor (EWTI Sec MOS 6177).

b. Enlisted Terrain Flight Instructor (ETERFI).

c. Enlisted Night Systems FAM Instructor (ENSFI).

d. Enlisted Night Systems Instructor (ENSI).

e. Enlisted Defensive Measures Instructor (EDMI).

f. Aerial Gunner Instructor (AGI).

g. Enlisted Night Systems SAR Instructor (ENSSI).

h. Crew Chief Instructor (CCI) (FRS only).

2. The above courses and applicable training codes are listed in the current MAWTS-1 Course Catalog or this order. There will be no refly factors for these instructor flights. T&R syllabus currency in stages is considered sufficient to maintain currency as an instructor. EWTIs are only qualified at the Weapons and Tactics Instructor course conducted at MAWTS-1 during WTI.

252. SPECIAL TRAINING. This category is designed for aircrew to develop proficiency in flight procedures and techniques involving special training requirements. Due to the special equipment and logistical support, facilities or supporting units required to conduct special training flights,

squadrons may complete these flights as appropriate support becomes available and mission requirements dictate.

1. Arctic Weather Training (AWT)

a. Purpose. To teach the fundamentals of and/or develop proficiency in any aspect of flying in cold weather with snow on the ground.

b. General

(1) Ambient air temperatures will normally be 10 degrees or below Fahrenheit with snow on the ground. Aircrew must note that cold dry conditions with blowing snow will significantly increase the difficulty of arctic weather flight.

(2) Aircrew shall be NSQ for all NS flights.

c. Crew Requirement. CC (AO if NS are used).

d. Ground/Academic Training

(1) Environmental factors.

(2) Arctic weather survival.

(3) Arctic weather physiology/psychology.

e. Flight Training. (1 Flight, 2.0 Hours).

AWT-621 2.0 1 CH-46E A (N)

Goal. Introduce helicopter operations in a cold weather environment.

Requirement

Discuss:
Cold dry conditions.
Blowing snow.
White-out conditions.
Aircraft cold weather limitations.
Aircraft anti-ice.
Icing.

Introduce:
Snow landing techniques.

Review:
NATOPS.

Performance Standards. Demonstrate ability to conduct aircraft operations in a cold weather environment.

Prerequisite. CAL-211.

External Syllabus Support. Snow on the ground.

2. Desert Operations (DES)

a. Purpose. To develop proficiency in aspects of flying in a dusty, high temperature, high density altitude, desert environment.

b. Crew Requirement. CC (AO if NS are used).

c. Ground/Academic Training

(1) Environmental factors (weather, desert conditions).

(2) Desert weather survival.

(3) Desert weather physiology/psychology.

(4) Desert weather clothing and equipment.

d. Flight Training. (1 Flight, 2.0 Hours).

DES-622 2.0 1 CH-46E A (N)

Goal. Introduce helicopter operations in a desert environment.

Requirement

Discuss:
Blowing sand.
Brownout conditions.
Aircraft hot weather performance limitations.

Introduce:
Desert landing techniques.

Review:
NATOPS.

Performance Standards. Demonstrate ability to conduct aircraft operations in a desert environment.

Prerequisite. CAL-211.

External Syllabus Support. Desert environment.

3. Water Landings (WTR)

a. Purpose. To develop the skills necessary to perform water landings.

b. General. Practice water landings shall be made in a fresh water environment.

c. Crew Requirement. CC.

d. Flight Training. (1 Flight, 1.0 Hour).

WTR-623 1.0 1 CH-46E A

Goal. Assist the pilot with executing a water landing.

Requirement

Discuss:
CRM requirements for water landings.
Water landing checklist.
Waterfall effect and salt encrustation.
Rescue with the side door down procedures and limitations.
Inadvertent HEFS deployment.
Ditching.

Introduce:
Water taxi.
Vertical water takeoff.
Vertical water landing.
Running water takeoff.
Running water landing.

Review:
Overwater rescue hoist operations.

Performance Standards. Demonstrate the ability to conduct water landings.

Prerequisite. CAL-211.

External Syllabus Support. Authorized fresh water landing area.

4. Functional Check Flight (FCF)

a. Purpose. To obtain an FCF designation.

b. General. Conduct the full range of FCF procedures to include ECCS engine set-ups.

c. Crew Requirements. CC.

d. Ground/Academic Training. NATOPS Chapter 10, Functional Check Flight checklist, squadron SOP for maintenance flights, and 4790 parameters and requirements.

e. Flight and Simulator Event Training. (1 Event, 2.0 Hours)

FCF-630 2.0 R,E 1 CH-46E A

Goal. Functional Check Flight designation.

Requirement. Effectively demonstrate the ability to perform a full card Functional Check Flight. Do not log code until crew chief is able to perform all facets of a FCF.

Discuss:
Maintenance test procedures.
Troubleshooting techniques.
Squadron SOP for maintenance flights.
Applicable MIMS.
Engine test set.
Rotor track and balance test set.
Vibration test set.

PMS/ECCS, and engine adjustments.
Strobex weight, cord weight, trim tab and pitch-link adjustments.

Review:
NATOPS Chapter 10, Functional Check Flight Checklist.

Performance Standards. Crew chiefs shall be familiar with the FCF test card, and demonstrate the ability to operate all test equipment and make all engine, RTB/Vib adjustments, and troubleshoot common aircraft/test equipment problems.

Prerequisite. Squadron FCF syllabus.

5. CRM Training

a. Purpose. To conduct annual CRM Training.

b. Crew Requirement. CC/(AO if NS are used).

c. Flight Training. (1 Flight, 2.0 Hours).

CRM-640 2.0 R 1 CH-46E A (N)

Goal. Practice/review CRM principles presented in the CH-46E CRM Training Course while executing a simulated mission scenario.

Requirement

Discuss:
Decision making.
Assertiveness.
Mission analysis.
Communication.
Leadership.
Adaptability/flexibility.
SA.

Evaluate:
Decision making.
Assertiveness.
Mission analysis.
Communication.
Leadership.
Adaptability/flexibility.
SA.

Emergencies: Perform as required to evaluate the above skills.

Prerequisite. Completion of the CH-46E CRM course.

253. QUALIFICATION AND DESIGNATION TRACKING. The purpose of this section is to establish training codes to track qualifications, designations, and instructor and flight leadership proficiency. The listed training codes shall not have any associated flight hour requirement or CRP.

1. Qualifications

a. Purpose. To establish training codes in order to track qualifications.

b. General

(1) Qualification training codes (QUAL) shall not have any associated flight time requirement or CRP. Qualification training codes can be logged on the effective date of a qualification and should be a one-time occurrence unless the qualification is lost. If a qualification is lost, the previously logged qualification code should be removed and subsequently re-entered upon becoming re-qualified.

(2) Prerequisites. IAW MCO P3500.14, MCO P3500.50, and MAWTS-1 Course Catalog.

c. Crew Requirement. IAW MCO P3500.14, MCO P3500.50, and MAWTS-1 Course Catalog.

d. Ground Training. IAW MCO P3500.14, MCO P3500.50, and MAWTS-1 Course Catalog.

e. Flight and Simulator Event Training. None.

QUAL-650 Goal. Tracking for TERF Qualification.

Requirement. At the discretion of the squadron commanding officer a letter assigning the individual as TERF Qualified shall be placed in the NATOPS jacket and APR.

Prerequisite. TERF Qualified IAW MCO P3500.14 and MCO P3500.50.

QUAL-651 Goal. Tracking for NS HLL Qualification.

Requirement. At the discretion of the squadron commanding officer a letter assigning the individual as NS HLL Qualified shall be placed in the NATOPS jacket and APR.

Prerequisite. NS HLL Qualified IAW MCO P3500.14 and MCO P3500.50.

QUAL-652 Goal. Tracking for AG Qualification (EAC).

Requirement. At the discretion of the squadron commanding officer a letter assigning the individual as AG Qualified shall be placed in the NATOPS jacket and APR.

Prerequisite. AG Qualified IAW MCO P3500.14 and MCO P3500.50.

QUAL-653 Goal. Tracking for CQ Qualification.

Requirement. At the discretion of the squadron commanding officer a letter assigning the individual as CQ Qualified shall be placed in the NATOPS jacket and APR.

Prerequisite. CQ Qualified IAW MCO P3500.14 and MCO P3500.50.

QUAL-654 Goal. Tracking for NS LLL Qualification.

Requirement. At the discretion of the squadron commanding officer a letter assigning the individual as NS LLL Qualified shall be placed in the NATOPS jacket and APR.

Prerequisite. NS LLL Qualified IAW MCO P3500.14 and MCO P3500.50.

QUAL-655 Goal. Tracking for DM Qualification.

Requirement. At the discretion of the squadron commanding officer a letter assigning the individual as DM Qualified shall be placed in the NATOPS jacket and APR.

Prerequisite. DM Qualified IAW MCO P3500.14 and MCO P3500.50.

QUAL-656 Goal. Tracking for TG Qualification (EAC).

Requirement. At the discretion of the squadron commanding officer a letter assigning the individual as TG Qualified shall be placed in the NATOPS jacket and APR.

Prerequisite. TG Qualified IAW MCO P3500.14 and MCO P3500.50.

QUAL-657

Goal. Tracking for FRS TERFQ Qualification.

Requirement. At the discretion of the squadron commanding officer a letter assigning the individual as FRS TERFQ shall be placed in the NATOPS jacket and APR.

Prerequisite. FRS TERFQ IAW MCO P3500.14 and MCO P3500.50.

QUAL-658

Goal. Tracking for FRS NSQ Qualification.

Requirement. At the discretion of the squadron commanding officer a letter assigning the individual as FRS NSQ shall be placed in the NATOPS jacket and APR.

Prerequisite. FRS NSQ IAW MCO P3500.14 and MCO P3500.50.

2. Designations

a. Purpose. To establish training codes in order to track instructor and flight leadership designations.

b. General

(1) Designation training codes for instructors (IDESIG) and flight leadership (DESIG) shall not have any associated flight time requirements or CRP. Designation training codes shall be logged for each event in which the individual acts in the capacity of the associated designation (IDESIG-660: instructing a TERFI required event; DESIG-670: leading a section). Effective use of these training codes will facilitate accurate tracking of instructor and flight leadership proficiency at the squadron level.

(2) Prerequisites. IAW MCO P3500.14, MCO P3500.50, and MAWTS-1 Course Catalog.

c. Crew Requirement. IAW MCO P3500.14, MCO P3500.50, and MAWTS-1 Course Catalog.

d. Ground Training. IAW MCO P3500.14, MCO P3500.50, and MAWTS-1 Course Catalog.

e. Flight and Simulator Event Training. IAW MCO P3500.14, MCO P3500.50, and MAWTS-1 Course Catalog.

IDESIG-660 Goal. Tracking for TERFI designation/proficiency.

Requirement. At the discretion of the squadron commanding officer a letter designating the individual as TERFI shall be placed in the NATOPS jacket and APR.

Prerequisite. Successful completion of the TERFI syllabus IAW MCO P3500.14, MCO P3500.50, and the MAWTS-1 Course Catalog.

IDESIG-661 Goal. Tracking for DMI designation/proficiency.

Requirement. At the discretion of the squadron commanding officer a letter designating the individual as DMI shall be placed in the NATOPS jacket and APR.

Prerequisite. Successful completion of the DMI syllabus IAW MCO P3500.14, MCO P3500.50, and the MAWTS-1 Course Catalog.

IDESIG-662 Goal. Tracking for NSFI designation/proficiency.

Requirement. At the discretion of the squadron commanding officer a letter designating the individual as NSFI shall be placed in the NATOPS jacket and APR.

Prerequisite. Successful completion of the NSFI syllabus IAW MCO P3500.14, MCO P3500.50, and the MAWTS-1 Course Catalog.

IDESIG-663 Goal. Tracking for NSI designation/proficiency.

Requirement. At the discretion of the squadron commanding officer a letter designating the individual as NSI shall be placed in the NATOPS jacket and APR.

Prerequisite. Successful completion of the NSI syllabus IAW MCO P3500.14, MCO P3500.50, and the MAWTS-1 Course Catalog.

IDESIG-664 Goal. Tracking for AGI designation/proficiency.

Requirement. At the discretion of the squadron commanding officer a letter designating the individual as AGI shall be placed in the NATOPS jacket and APR.

Prerequisite. Successful completion of the AGI syllabus IAW MCO P3500.14, MCO P3500.50, and the MAWTS-1 Course Catalog.

IDESIG-665 Goal. Tracking for TGI designation/proficiency.

Requirement. At the discretion of the squadron commanding officer a letter designating the individual as TGI shall be placed in the NATOPS jacket and APR.

Prerequisite. Successful completion of the TGI syllabus IAW MCO P3500.14, MCO P3500.50, and the MAWTS-1 Course Catalog.

IDESIG-666 Goal. Tracking for WTI designation/proficiency.

Requirement. At the discretion of the squadron commanding officer a letter designating the individual as WTI shall be placed in the NATOPS jacket and APR.

Prerequisite. Successful completion of the WTI syllabus IAW MCO P3500.12, MCO P3500.14, MCO P3500.50, and the MAWTS-1 Course Catalog.

IDESIG-667 Goal. Tracking for NSSI designation/proficiency.

Requirement. At the discretion of the squadron commanding officer a letter designating the individual as NSSI shall be placed in the NATOPS jacket and APR.

Prerequisite. Successful completion of the NSSI syllabus IAW MCO P3500.14, MCO P3500.50, and the MAWTS-1 Course Catalog.

IDESIG-668 Goal. Tracking for FRSI designation/proficiency.

Requirement. At the discretion of the squadron commanding officer a letter designating the individual as FRSI shall be placed in the NATOPS jacket and APR.

Prerequisite. Successful completion of the FRSI syllabus IAW MCO P3500.14, MCO P3500.50, and the MAWTS-1 Course Catalog.

DESIG-674 Goal. Tracking for FCF designation/proficiency.

Requirement. At the discretion of the squadron commanding officer a letter assigning the individual as FCF designated shall be placed in the NATOPS jacket and APR.

Prerequisite. FCF designated IAW MCO P3500.14, MCO P3500.50, OPNAVINST 4790, and Squadron SOPs.

254. GROUND TRAINING/ACADEMIC TRACKING. The purpose of this section is to establish training codes (ACAD-700 through ACAD-899) to track the completion of ground training/academic requirements IAW MCO P3500.14, MCO P3500.50, and the MAWTS-1 Course Catalog. The listed training codes shall not have any associated flight hour requirement or CRP.

1. Ground/Academic Training

a. Purpose. To establish training codes in order to track ground training/academic requirements.

b. General

(1) Ground training/academic training codes (ACAD) shall not have any associated flight time requirements or CRP. Ground training/academic training codes shall be logged each time the requirement is completed.

(2) THIS STAGE WILL BE COMPLETED AT A LATER DATE FOLLOWING THE REVISION AND UPDATE OF THE MAWTS-1 COURSE CATALOG.

(3) Prerequisites. IAW MCO P3500.14, MCO P3500.50, and MAWTS-1 Course Catalog.

c. Crew Requirement. N/A.

d. Ground Training. IAW MCO P3500.14, MCO P3500.50, and MAWTS-1 Course Catalog.

e. Flight and Simulator Event Training. N/A.

260. ORDNANCE REQUIREMENTS. Requirements are based on a single aircrew basis per OPNAVNOTE 8010.

ORDNANCE	100 SERIES	200 SERIES	300 SERIES	400 SERIES	REFRESHER	IUT	*ANNUAL
.50 cal	0	1,500	3,500	1,000	4,000	2,000	4,000
7.62 mm	0	0	0	1,000	1,000	1,500	1,000

*Annual Ordnance requirements maintain aircrew member proficiency.

270. MOS SYLLABUS MATRIX. These tables display specific 100 - 600 level event information such as; flight/simulator hours, refly interval, prerequisites, CRP, chaining, etc. in a table format.

CH-46E CREW CHIEF / AERIAL OBSERVER
100 SERIES CORE SKILL INTRODUCTION

STAGE	TRNG CODE	FLT HOURS	SIM HOURS	REFLY INTVL	DEVICE	# OF A/C	ENVIRMNT	PREREQ	POI	EVAL	CRP	CHAINING	EVENT DESC	EVENT CONV
FAM														
FAM	109	2.0		*	A	1	D				4.0		START	109
FAM	110	2.0		*	A	1	D	109	O		4.0		CC DUTIES	110
FAM	111	2.0		*	A	1	D	110			4.0		REV FAM	
FAM	116	1.5		*	A	1	D	111			4.0		AIRCRAFT PROCEEDURES	116
FAM	117	1.5		*	A	1	N	116	O		4.0		NIGHT FAM	117
											20.0			
NAV														
NAV	131	1.5		*	A	1	(N)	110			4.0		DAY NAV	130
											4.0			
CAL														
CAL	141	1.5		*	A	1	D	116			4.0		DAY CAL	141
											4.0			
FORM														
FORM	151	1.5		*	A	2	D	141	O		4.0		DAY FORM CRUISE	151
											4.0			
EXT														
EXT	161	1.5		*	A	1	D	116	O		4.0		EXT	161
											4.0			
TERF														
TERF	171	1.5		*	A	1	D	116	O		4.0		TERF	171
											4.0			
NS														
NS	181	1.5		*	A	1	NS	NITE LAB 117	O		4.0		NS FAM	119
NS	182	1.5		*	A	1	NS	181,131	O		4.0		NS NAV	133
NS	183	1.5		*	A	1	NS	117,141	O		4.0		NS CAL	142
											12.0			
REV														
REV	191	1.5		*	A	1	(N)		O	E	4.0		REV	181
											4.0			
CSIX														
CSIX	192	1.5		*	A	1	(N)	191	O	E	4.0		NATOPS	182
											4.0			
CRP TOTAL FOR PHASE											60.0			

CH-46E CREW CHIEF / AERIAL OBSERVER 200 SERIES CORE SKILL BASIC														
STAGE	TRNG CODE	FLT HOURS	SIM HOURS	REFLY INTVL	DEVICE	# OF A/C	ENVIRMNT	PREREQ	POI	EVAL	CRP	CHAINING	EVENT DESC	EVENT CONV
FAM/INST														
FAM/ INST	201	2.0		180	A	1	(N)		R		0.5		FAM	202
											0.5			
CAL														
CAL	211	1.5		180	A	1	D	201			0.5	201	CALS	211
CAL	212	1.5		180	A	2	D	211	R,O		1.0	211	MULTI A/C CALS	212
											1.5			
EXT														
EXT	221	1.5		365	A	1	D	211	R,O		1.0	211	DAY EXTERNALS	221
											1.0			
FORM														
FORM	231	1.5		180	A	2	D	201	R		0.5		TACFORM	231
											0.5			
TERF														
TERF	241	1.5		180	A	1	D				0.5		TERF MANEUVERS	241
TERF	242	1.5		180	A	1	D	241			0.5	241	TERF	242
TERF	243	1.5		180	A	2	D	242	R,O		1.0	241,242	SEC TERF	243
											2.0			
NS														
NS	251	1.5		180	A	1	NS	211	R,O		0.5	211	HLL CALS	251
NS	252	1.5		180	A	2	NS	231,251			0.5	231	HLL FORM	252
NS	253	1.5		180	A	2	NS	212,252	R,O		1.0	211,212,231,251, 252	HLL SEC CALS	253
NS	254	1.5		180	A	3	NS	253			1.0	211,212,231,251, 252,253	HLL DIV CALS/FORM	254
NS	255	1.5		180	A	1	NS	TERFQ,251			0.5	241,242,243	HLL TERF	255
NS	256	1.5		180	A	2	NS	TERFQ, 252,255	O		1.0	231,241,242,243, 252,255	HLL SEC TERF	256
NS	257	1.5		180	A	2	NS	254,255, 256	R,O		1.0	211,212,231,241, 242,243,251,252, 253,255,256	HLL SEC TERF/CALS	257
											5.5			
AG														
SAG	280		1.5	*	S		D				0.0		DAY SIM AG	280
AG	281	1.5		365	A	1	D	280			1.0	280	DAY AG	281
AG	282	1.5		365	A	2	D	281	R,O		1.0	280,281	SECTION DAY AG	282
AG	283	1.5		365	A	1	D	282	R,O		1.0	280,281,282	DAY MOVING TGT AG	283
											3.0			
CQ														
CQ	291	1.0		365	A	1	D	211	O		0.5		DAY FCLP	291
CQ	293	1.0		365	A	1	NS	251,291	O		0.5	291	NS FCLP	293
											1.0			
CRP TOTAL FOR PHASE											**15.0**			

CH-46E CREW CHIEF / AERIAL OBSERVER
300 SERIES CORE SKILL ADVANCED

STAGE	TRNG CODE	FLT HOURS	SIM HOURS	REFLY INTVL	DEVICE	# OF A/C	ENVIRMNT	PREREQ	POI	EVAL	CRP	CHAINING	EVENT DESC	EVENT CONV
CQ														
CQ	300	1.0		365	A	1	D	291	O		1.0	211,291	DAY CQ	300
CQ	301	1.0		365	A	1	NS	293,300	R,O		1.0	211,251,291,293,300, (311 LLL)	NS CQ	301
											2.0			
NS														
NS	311	1.5		180	A	1	NS	257	R,O		1.0	211,251	LLL CALS	311
NS	312	1.5		180	A	2	NS	311	R,O		1.0	211,212,251,252,253, 311	LLL SEC CALS	312
NS	313	1.5		180	A	3	NS	312	R,O		1.0	211,212,251,252,253, 254,311,312	LLL DIV CALS	313
NS	314	1.5		180	A	2	NS	313	R,O		1.0	211,212,231,241,242, 243,251,252,253,255, 256,257,311,312	LLL TERF/FORM/ CALS	314
											4.0			
AG														
SAG	320		1.5	*	S	1	NS	283			0.0		NS SAG	320
AG	321	1.5		365	A	1	NS	320			1.0	281,320	NS AG	321
AG	322	1.5		365	A	2	NS	321	R,O		1.0	281,282,283,321	NS SECTION AG	322
											2.0			
GTR														
GTR	331	1.5		365	A	2	(NS)	TERFQ,AGQ,231	R		1.0	231,241,242,(252), 281,282,(321,322)	GRD THREAT REACT	331
GTR	332	1.5		365	A	2	(NS)	TERFQ,231,331	R		1.0	231, 241, 242,(252)	MULTI A/C GRD THREAT REACT	332
											2.0			
MAT														
MAT	351	1.5		365	A	1	D	211	R,O		1.0	211	DAY MAT	351
											1.0			
HIE														
HIE	361	1.0		365	A	1	D	211,221	R,O		2.0	211	FASTROPE/ RAPPEL	361
HIE	362	1.0		365	A	1	NS	361,392	O		2.0	211,251,361,(311 LLL)	NS FASTROPE/ RAPPEL	362
											4.0			
TAC														
TAC	371	1.5		180	A	2	D	TERFQ,AGQ,212	O		1.0	211,212,231	DAY LOW THREAT	371
TAC	372	1.5		180	A	2	NS	371, NSQ FOR APT LL (OR NSI WITH NON-NSQ PILOT)	O		1.0	211,212,231,251, 252, 253,371,(311 LLL), (312 LLL)	NS LOW THREAT	372
TAC	374	1.5		180	A	2	D	371	O		1.0	211,212,231,371,373	DAY MED THREAT	374
TAC	375	1.5		180	A	2	NS	372	R,O		1.0	211,212,231,251,252, 253,371,372,373,374, (311 LLL),(312 LLL)	NS MED THREAT	375
											4.0			
EXT														
EXT	392	1.5		365	A	1	NS	221,251	R,O		1.0	210,211,221,251,(311 LLL)	NS EXT	392
											1.0			
CRP TOTAL FOR PHASE											**20.0**			

CH-46E CREW CHIEF / AERIAL OBSERVER
400 SERIES CORE PLUS

STAGE	TRNG CODE	FLT HOURS	SIM HOURS	REFLY INTVL	DEVICE	# OF A/C	ENVIRMNT	PREREQ	POI	EVAL	CRP	CHAINING	EVENT DESC	EVENT CONV
TAC														
TAC	401	1.5		365	A	2	D	374,332	O		0.4	211,212,231,241, 242,243,331,332, 371, 374	DAY HI THREAT	401
TAC	402	1.5		365	A	2	NS	375, 401, NSQ FOR APT LL	R,O		0.5	211,212,231,241, 242,243,251,252, 253,255,256,257, 331,332,371,372, 374,375,401,(311 LLL),(312 LLL), (314 LLL)	NS HI THREAT	402
											0.9			
CAL														
CAL	413	1.5		365	A	1	N*	201,211	O		0.3	211	UNAIDED CALS	213
											0.3			
EXT														
EXT	420	1.5		365	A	1	D	221,242	O		0.3	211,221,241,242	DAY TERF EXT	420
											0.3			
NBC														
NBC	431	1.0		365	A	1	D	211			0.2	211	DAY NBC	430
NBC	432	1.0		365	A	1	NS	257,431	R		0.3	211,251,431,(311 LLL)	NS NBC	431
											0.5			
DM														
DM	441	1.5		365	A	2	D	332	R		0.3	231,442	RW DM	441
DM	442	1.5		365	A	2	D	332	R		0.3	231	FW DM	442
											0.6			
MAT														
MAT	450	1.5		365	A	2	D	212,351	O		0.2	211,212,351	DAY SEC MAT	450
MAT	451	1.5		365	A	1	NS	251,351	R,O		0.2	211,251,351,(311 LLL)	NS MAT	451
											0.4			
HIE														
HIE	460	1.0		365	A	1	(NS)	221	R,O		0.2	211,221	SPIE	460
HIE	461	1.0		365	A	1	(NS)		R,O		0.2		AERIAL DELIVERY	461
HIE	462	1.0		365	A	1	(NS)		R,O		0.2		HELOCAST/SOF TDUCK	462
HIE	463	1.0		365	A	1	(NS)	221	R,O		0.2	211,221	HOIST OPS	463
											0.8			
SFAM														
SFAM	470		1.5	*	S				R,O		0.1		EP FAM	470
											0.1			
TG														
TG	481	1.5		365	A	1	D	AGQ	R		0.3		DAY TG	481
TG	482	1.5		365	A	1	NS	481	R		0.4	481	NS TG	482
											0.7			
CQ														
CQ	490	1.0		365	A	1	N*	413,291	O		0.2	291	UNAIDED FCLP	292
CQ	491	1.0		365	A	1	N*	292,300	R,O		0.2	211,291,300,413	UNAIDED CQ	491
											0.4			
CRP TOTAL FOR PHASE											**5.0**			

CH-46E CREW CHIEF / AERIAL OBSERVER
500 SERIES INSTRUCTOR

STAGE	TRNG CODE	FLT HOURS	SIM HOURS	REFLY INTVL	DEVICE	# OF A/C	ENVIRMNT	PREREQ	POI	EVAL	CRP	CHAINING	EVENT DESC	EVENT CONV
FAM														
FAM	500	1.5		*	A	1	D			E	0.0	201	DAY INSTR TECH	500
FAM	501	1.5		*	A	1	N*			E	0.0	201	NIGHT INSTR TECH	505
											0.0			
NAV														
NAV	502	1.5		*	A	1	D			E	0.0	211,351	NAV INSTR TECH	506
											0.0			
CAL														
CAL	503	1.5		*	A	1	D			E	0.0	211,241, 242	CAL INSTR TECH	507
											0.0			
FORM														
FORM	504	1.5		*	A	1	D			E	0.0	231	FORM INSTR TECH	509
											0.0			
TERF														
TERF	505	1.5		*	A	1	D			E	0.0	241	TERF INSTR TECH	
											0.0			
EXT														
EXT	506	1.5		*	A	1	D			E	0.0	201	STAN CERT	513
											0.0			
NS														
NS	507	1.5		*	A	1	NS			E	0.0			
											0.0			
STANX														
STANX	511	3.0		*	A	1	(N)	500-507 ACAD 031		E	0.0	201	STAN CERT	513
											0.0			
AGI														
AGI	540	1.5		*	A	1	D			E	0.0	281	DAY AG IUT	590
AGI	541	1.5		*	A	2	NS			E	0.0	321	NS AG IUT	591
AGI	542	1.5		*	A	1	NS			E	0.0	283	AGI CERT MLT	592
AGI	543	1.5		*	A	2	NS			E	0.0	322	AGI CERT NS SECTION	593
											0.0			
TGI														
TGI	545	1.5		*	A	1	D			E	0.0	481	TGIUT DAY	593
TGI	546	1.5		*	A	1	NS			E	0.0	482	TGIUT NS	593
TGI	547	1.5		*	A	2	NS			E	0.0	482	TGI CERT	593
											0.0			
NSSI														
NSSI	550	1.5		*	A	1	NS			E	0.0	201,211	NS SS WORK	550
NSSI	551	1.5		*	A	1	NS			E	0.0	201,211,251,311	LLL CALS/NAV	551
NSSI	552	1.5		*	A	1	NS			E	0.0	201,211,251,311	LLL CALS/NAV INSTR TECH	552
											0.0			
NSFI														
NSFI	560	1.5		*	A	1	NS			E	0.0	201	HLL SS WORK	560
NSFI	561	1.5		*	A	1	NS			E	0.0	201,211,251	HLL CAL/NAV	561
NSFI	562	1.5		*	A	1	NS			E	0.0	201,211,251	HLL INSTR TECH	562
											0.0			

CH-46E CREW CHIEF / AERIAL OBSERVER 500 SERIES INSTRUCTOR														
STAGE	TRNG CODE	FLT HOURS	SIM HOURS	REFLY INTVL	DEVICE	# OF A/C	ENVIRMNT	PREREQ	POI	EVAL	CRP	CHAINING	EVENT DESC	EVENT CONV
TERFI														
TERFI	570	1.5		*	A	1	D			E	0.0	221,241,242	DAY TERF MAN INSTR TECH	570
TERFI	571	1.5		*	A	2	D			E	0.0	231,241,242,243	DAY TERF NAV INSTR TECH	571
TERFI	572	1.5		*	A	2	D			E	0.0	231,241,242,243	TERFI CHECK	572
											0.0			
DMI														
DMI	581	1.5		*	A	2	D			E	0.0	231,241	RW/FW DM INSTR TECH	581
DMI	582	1.5		*	A	2	D			E	0.0	231,241	RW/FW DMI CHECK	582
											0.0			
NSI														
NSI	590	1.5		*	A	1	NS			E	0.0	201,211,251,291, 293,(311 LLL)	NS INSTR TECH	590
NSI	591	1.5		*	A	2	NS			E	0.0	201,211,212,251, 252,253,(311 LLL),(312 LLL), (314 LLL)	NS FORM/NAV/CAL/TERF INSTR TECH	591
NSI	592	1.5		*	A	1	NS			E	0.0	201,211,221,251, 291,293,392, (311 LLL)	LLL NSI CHECK	592
NSI	593	1.5		*	A	2	NS			E	0.0	201,211,212,231, 241,242,243,251, 252,253,255,256, 257,(311 LLL), (312 LLL),(314 LLL)	LLL SEC NSI CHECK	593
											0.0			
CRP TOTAL FOR PHASE											0.0			

CH-46E CREW CHIEF / AERIAL OBSERVER
600 SERIES REQUIREMENTS, QUALIFICATIONS, DESIGNATIONS

STAGE	TRNG CODE	FLT HOURS	SIM HOURS	REFLY INTVL	DEVICE	# OF A/C	ENVIRMNT	PREREQ	POI	EVAL	CRP	CHAINING	EVENT DESC	EVENT CONV
RQD														
RQD	600	1.5		365	A	1	(N)	182	O	E	0.0	200,201	NATOPS CHECK	600
											0.0			
SPECIAL TRAINING														
AWT	621	2.0		*	A	1	(N)	211			0.0		ARCTIC WTHR TRNG	620
DES	622	2.0		*	A	1	(N)	211			0.0		DES OPS	630
WTR	623	1.0		*	A	1	D	211			0.0		WTR LANDINGS	650
											0.0			
FCF														
FCF	630	2.0		*	A	1	D	SQUADRON FCF SYLLABUS AND READING	R	E	0.0		FCF	
											0.0			
CRM														
CRM	640	2.0		365	A/S	1	(N)	COMPLETION OF THE CH-46E CRM COURSE	R	E	0.0		SIM/AC CRM	640
											0.0			
CRP TOTAL FOR PHASE											**0.0**			